THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION

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Summer Comes. It finds the Association with the highest membership in the history of organized osteopathy. Divisional societies are growing in influence and usefulness. Osteopathic colleges have had the largest enrolments, both graduate and undergraduate, in history. Support of the Committee on Public and Professional Welfare, prompt payment of dues, and the enlistment of your neighbor's full and active support, will accelerate the forward movement.

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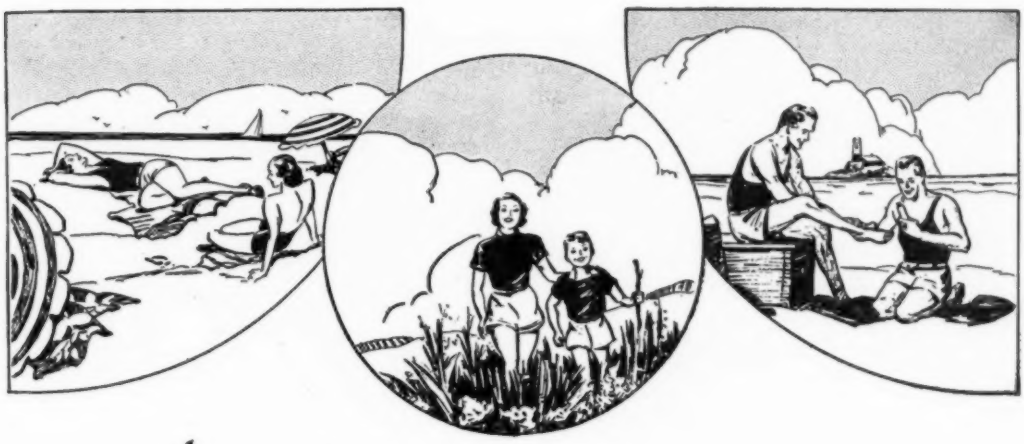

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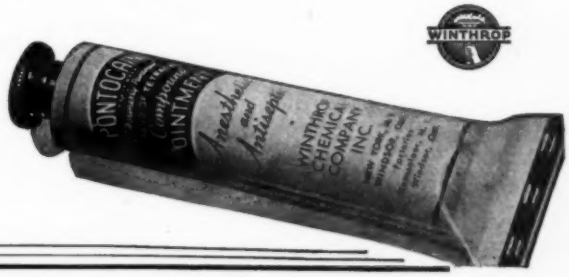

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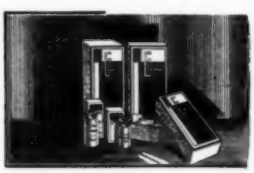

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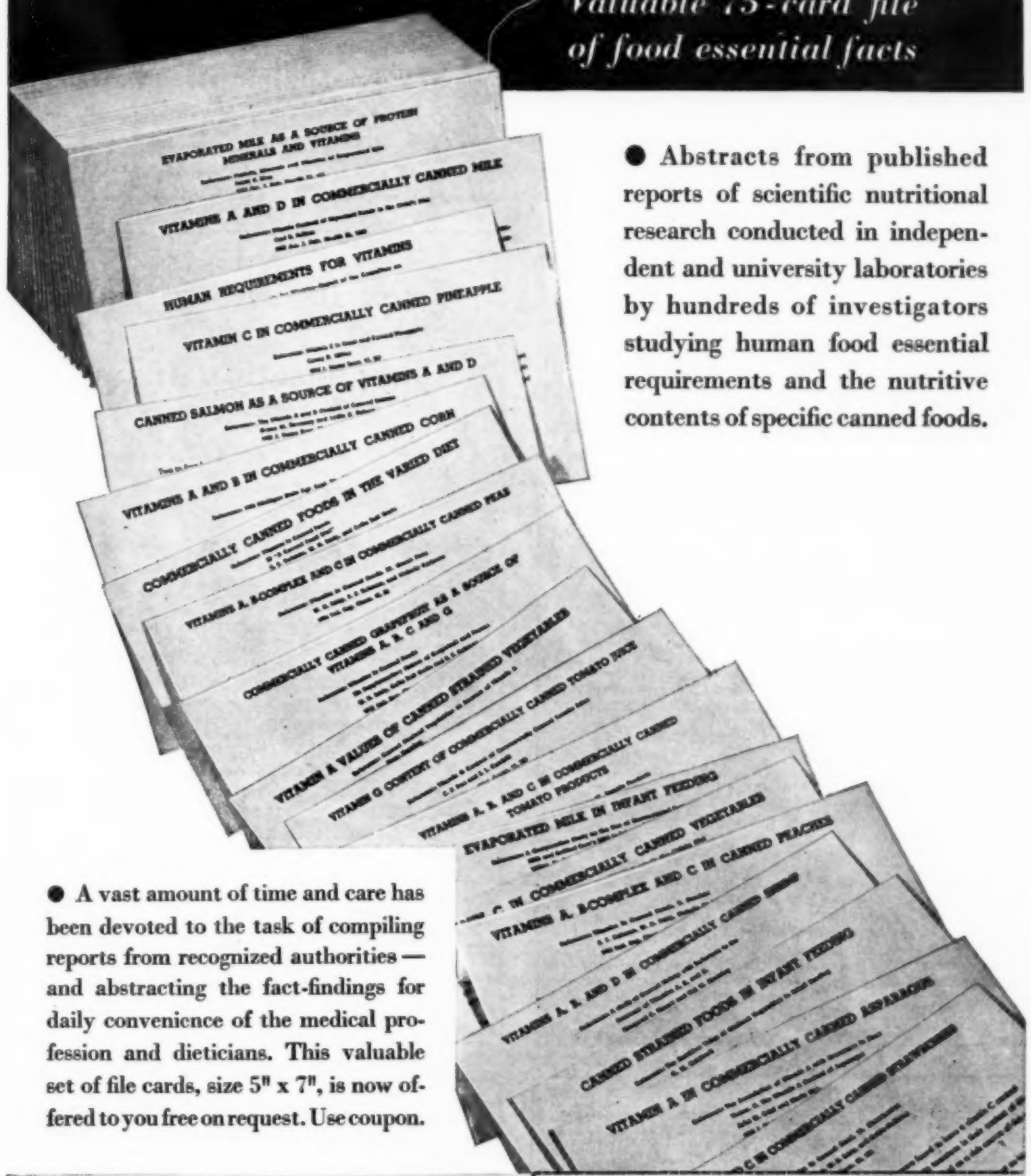
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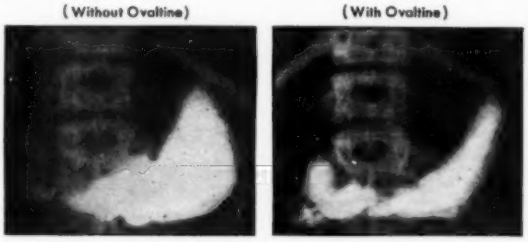

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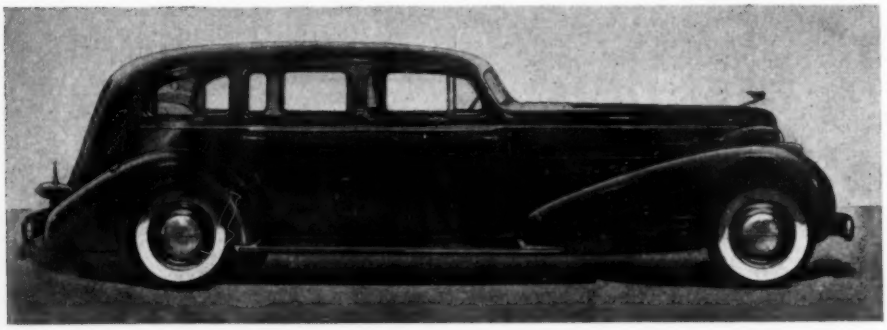

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An Important Consideration in Cervical Technic*

S. V. ROBUCK, D.O.
Chicago

Frequent discussions of a subject so revolutionary as the osteopathic lesion certainly are not inappropriate.

To understand the concept embodied in the "lesion" theory of etiology of functional and organic pathology, a clear mental picture must be had of the anatomy of single segments and of the interrelation of one segment with other segments and with the body as a whole. It is also imperative that the concept of the macroscopic and microscopic pathology of the somatic structure, as well as that of the visceral tissues, be extensive and complete.

There may be some disagreement on some of the points brought up in this paper, particularly on one of them. However, I believe the basis for my position on this usually controversial point is sufficiently factual to stand investigation and the acid test of time.

The pathology of somatic structure may often be seen on inspection of the bare back. Unnatural prominences of the spinal column, bulging of muscles, or irregularity of alignment of bony structure are often observed. The contour of the body often discloses the lesioned regions.

By very light palpation the skin and particularly the subcutaneous fascia are found to be tense. These findings should direct the palpating fingers to the superficial spinal muscles which are responsible for the co-ordination of function of regions of the spine and which become habitually tense to prevent further malalignment.

Beneath the tense massive superficial muscles the trained fingers find the deep muscles lying between the transverse processes and between the spinous processes. Even beneath these, the muscles lying immediately over the facets and laminae are palpable.

It is the influence of these short muscles, which are intimately related to joint structure and direct the motions of one vertebra in relation to another, that interests the osteopathic physician most. Much of what has happened to the joint, and what the operator can accomplish in making corrections, depends on these deep short muscles.

*Prepared for the Fortieth A.O.A. Convention held at New York, 1936.

After analyzing the palpable changes in the supporting elastic structure superficial to the ligaments, our attention is given to the mobility of joints and the position of one vertebra relative to another. Like Dr. Albert E. Guy[1], I believe that intervertebral lesions do not occur singly, or at most but rarely. For this to take place the laws of accommodation would have to be invalidated. In my opnion the living human skeleton has the greatest possibilities for mechanical compensation of any organic structure. This compensating mechanism undoubtedly is responsible for the survival of the vertebrate.

What we find on palpation is malalignment of a group or groups of vertebrae presenting a mass or group lesion. Somewhere in the mass lesion will be found the key lesion. The return to normalcy of the tissues in the mass lesion will depend much upon finding the key lesion and being able to secure correction, or adjustment, of this lesion.

It is desired particularly to point out in this discussion that the intervertebral lesion involves all the structures of which a joint is composed. To think of a spinal lesion only in terms of what can be palpated would leave one with a very limited concept. He would be tremendously handicapped in attempts to apply technic.

In the nomenclature and classification of lesions, accepted by the Committee on Nomenclature of the Associated Colleges of Osteopathy,[2] descriptions of flexion, extension, sidebending, and rotation lesions were recorded. However, there is another factor entering into the problem of malaligned spinal joints that needs presentation. This has to do with sideslipping of vertebrae. Can vertebrae slip laterally one on the other?

We know that the direction of movement is determined by the presenting direction of the facet surfaces, by the retaining influence of the intervertebral disc and the ligaments of the joint, and by the pull of muscles.

The facets permit many combinations of motion. Ligaments, disc, and muscles limit motion. Close studies clinically, and of the dissected spine, disclose

that aside from the combinations of movements usually described, a definite lateral position is possible. This is true of the cervical, upper thoracic, fifth lumbar on the sacrum, the lower thoracic and the typical lumbar. They have been mentioned in the order of the freedom and frequency with which sideslipping may occur. The lumbar vertebrae have much more rotation during sideslipping than do the others. Most of the lateral motion of the lumbar vertebrae is of their bodies.

There is probably no such a thing as a pure rotation lesion. Neither is there a pure lateral subluxation, but lateral displacement does play a major part in the lesion complex of many subluxations.

The disc, being more or less elastic, permits the body of the vertebra to move laterally. In the lateral subluxation, it must be understood that the bodies of the two vertebrae in lesion travel in the same direction to some extent. This, I believe, is a little contrary to the usually accepted idea. One vertebra does not move to the left while the adjoining one travels to the right. One may and does move farther than does the other one, which gives it the appearance of vertebrae moving in opposite directions. Another confusing factor is the attempt at compensation in the adjacent joint or joints which gives the appearance of one vertebra moving to the right and one to the left.

Cognizance of the actual lateral position of the vertebra will aid us in applying technic. In the cervical region the possibilities of sideslipping are so great that it is rather striking. The facets and the bodies move laterally. The degree to which this type of subluxation is possible is probably as great as that of any other type of lesion of a typical cervical joint. The elasticity of the disc and ligaments and direction of facets make this possible. Such a malalignment creates a lesion group with a convexity on the side to which the vertebrae move and a concavity on the opposite side.

One of the first principles of technic in such an instance is to reduce the convexity or even attempt to transfer it to the opposite side. Special care must be exercised to eliminate also the so-called physiological cervical curve. By accomplishing these two prime factors in technic, much has been done to assure success without straining either muscles or ligaments.

From this point on to the completion of the corrective operation it is probably impossible to give an adequate detailed description of the application of force and direction of force, or perhaps, it would be better to say, forces. It is at this point that the art of technic really begins. Much of it the student of technic must learn by careful and frequent observations and continuous study. He must analyze the interrelation of position and changes of position that take place as he carries the technic on from the initial step to its completion.

It will assist the operator if he will keep a mental picture of the direction of the facets; and the planes of the surfaces of the articulating parts of the vertebral bodies.

The line of movement should be almost in line with the surfaces of the facets but not quite so. The vertebral body surface should be released to pass in a neutral line of motion, that is to say, in a plane in which the surfaces of adjacent bodies will be parallel to each other. At times when there is approximation of the bodies it is well to increase the disc space as a part of adjustive technic. When this is done, more force is needed to effect the adjustment than would be necessary if their is less approximation.

Just a parenthetical word about the use of force: It should not be carried through beyond the normal range of movement secured in making the correction. It must stop at the point where retaining structures have reached their limit of elasticity. Failure to observe this results in pain to the patient and strain to the ligaments and muscles.

Resuming our consideration of the sideslipping lesion, I shall describe some points, other than those just given, specifically applicable in adjusting the second and third cervical with presenting convexity or sideslipping to the right.

With the patient supine, the second finger of the operator's right hand should be placed firmly over the right facet, covering the lamina with the end of the finger against the base of the spinous process. The operator should turn the patient's head to the right, reducing the physiological cervical curve and the convexity produced by the lesion. This position and tension should be maintained as the operator proceeds through the final stage of adjustive technic. With the left hand grasping the left side of the head and jaw, his fingers firmly grasp the second and third cervical segment on the left. The under or right hand is carried to the operator's left even more than the left moves toward the right. By this action the second finger of the right hand forces the second cervical vertebra to the left while the left hand serves as a guiding force.

Another effective technic can be used by turning the patient's head to the left. Then the operator's under or left hand becomes a guiding factor and a point of slightly motile fixation, that is, it is carried backward to the operator's right to only a slight extent while the real corrective force is applied by the right hand. The left hand should also exert traction. The position of hands and the application of force is practically the same in both types of technic. The choice of one or the other depends upon the influence of secondary lesions, and it is only by experience that the operator learns to detect this influence.

The technic just described is not presented as the only correct operative procedure for such a lesion, but rather to exhibit the principles involved in correcting lateral subluxations. There are many other excellent methods, but the three points given are important and should always be kept in mind regardless of the particular technic used. These three principles are: reduce the physiological curve, reduce the convexity of the lesion, apply force in a direction just off the line with the plane of facet surface, using finger closely applied to facet, lamina, and base of spinous process.

Earlier in this paper it was stated that group or mass lesions are the rule. This being true, adjustment can often be secured more easily and more completely by taking the mass lesion in at one operation rather than attempting a technic having as an objective the reduction of each intervertebral lesion by as many distinct adjustments. I believe that in many cases a more complete alignment of vertebral bodies and facets is obtained by this type of technic. I do

not subscribe to "shot gun" technic. There is no doubt but that there are many occasions when the correction of a single joint is the procedure of choice.

SUMMARY

Several points have been raised in this discussion that have not been enlarged upon. Space precludes further discussion. Undoubtedly many osteopathic physicians have been treating lateral subluxations as rotation lesions or rotation and sidebending lesions. In my opinion a large percentage of the latter are chiefly lateral subluxations and a technic designed for such a lesion will be more effective.

1. An intervertebral subluxation involves every structure of that segment, the skin, fasciae, superficial and deep muscles, ligaments, as well as vertebral alignment, including facets and bodies of vertebrae and the disc.

2. Intervertebral subluxations occur in mass or group lesions with a key lesion contained within that mass lesion.

3. Lateral subluxation occurs and technic designed to reduce the lateral malalignment will be most effective.

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Roentgenological Interpretation of Trauma*

WALTER E. BAILEY, D.O.
Saint Louis

Life is the quality or character which distinguishes an animal or a plant from inorganic or from dead organic bodies and which is especially manifested by metabolism, growth, reproduction, and internal powers of adaptation to environment.[1] The everchanging environment subjects the organism to external forces, often violently applied.

Prehistoric man was subjected to violence from man and beast, as well as the elements. The jungle law—the survival of the fittest—lead to natural selection which weeded out the weak and the unfit. Only those who were physically strong and mentally alert could survive. The injured, those weakened by age, violence or disease, became ready victims of predaceous beasts.

Scientists, well-trained in osteology and anthropology, have given us many facts concerning the treatment of bone injuries. The studies of Egyptian mummies and of skeletal remains of many prehistoric people have enriched our minds as to the methods used and the results obtained in primitive methods of healing. Crude mechanical devices to maintain fractured bones in proper position, coupled with the wonderful reparative forces of nature, brought about results that might rival the success of capable surgeons of today. Attempts at trephining the skull for depressed fractures were apparently successful.

Present-day civilization has brought new problems. The development of modern machinery and vehicles of locomotion on land and sea, and in the air has brought about many new types of trauma, which are characteristic of the manner of their infliction. Power presses, cog machinery, saws traveling at high speed with their endless belts, airplanes and automobiles—all take their toll of the careless and the unwary. The tired workers, those lacking in alertness, those emboldened or befuddled by alcohol, show a greater incidence of injury than those who are not fatigued and are alert mentally.

The current return of industrial prosperity and employment has added a new problem. Many a skilled laborer, upon returning to work after a long period of inactivity has suffered traumatic injury the first day of his return because the dexterity, the alertness of hand and eye had been lost during the period of his enforced unemployment.

The social and economic loss from injuries in industry, alone, makes this problem of trauma from external, violent force, one of immediate concern to every class of society.

Osteopathic physicians and surgeons are called upon to play an important part in minimizing this economic loss through their methods of diagnosis and treatment.

The principles of osteopathic practice are founded upon an intimate knowledge of anatomy, physiology, and the ability of the body to elaborate the necessary materials for bodily maintenance and repair; whilst the hands are trained through constant use to search out gently those most minute deviations from the normal skeletal and other anatomical structures whether the injury be to the soft tissues alone or to the bony framework.

Those gentle, strong, and capable hands, osteopathically trained, have no equal when it comes to anatomical replacement, alleviation of pain and suffering, and the restoration of physiological function. Using kindly the laws of leverage, the osteopathic physician recognizes that slight response or "give" of the tissues which signifies that correction has taken place. He is governed always by a definite knowledge of practical applied anatomy and a consciousness of the physiological laws that will co-operate to secure not only an anatomical repair, but also that vital restoration of function so dependent upon the conservation of the soft tissues.

The return of function is the ultimate aim of every surgeon in treating the conditions arising from trauma. It is the one cardinal principle upon which we, as osteopathic physicians and surgeons, may base our claims to any superiority of methods over any other system of practice.

*Delivered before the Orthopedic Section at the Fortieth A.O.A. Convention at New York, 1936.

In evaluating the results of treatment, it is important that we use the accepted scales of rating "permanent disability," according to the ratio accepted by the workmen's compensation boards and similar bodies of a judicial nature in allowing disability compensation[2].

The successful treatment of injuries may be secured in many cases by the skilful use of the special senses of the surgeon without the aid of more highly specialized means of diagnosis and observation during the course of treatment, but one is indeed fortunate who has readily available modern x-ray apparatus.

A new means of understanding the mechanics of fractures and the changes which occur during the developmental and healing processes of bones and joints was obtained when Wilhelm Konrad Roentgen discovered the x-ray.

It was that early physician, Hippocrates, who taught his students "to see beneath the surface" when treating fractures or disease, and when the x-ray was discovered physicians and surgeons of all schools of practice were quick to realize the possibilities of visualizing the changes in the detail and structure of bones by use of this method. Modern x-ray apparatus enables the trained roentgenologist to estimate correctly and quickly the true state of affairs and to know when the most favorable conditions have been secured for functional restoration. By the use of the fluoroscopic screen, we are enabled to visualize the fractured ends of bone and to watch their movements during restoration of anatomical alignment. We are enabled by use of films to record the exact conditions found as the result of injury, to observe the changes occurring during osteogenesis and repair, to modify our course of treatment as circumstances indicate and to preserve as final records for our study or use in legal procedures, a visual record of how skilfully we have acquitted ourselves in our time of professional or legal responsibility.

The time has now come when it is considered criminal negligence to treat traumatic injuries without using at frequent intervals this method of obtaining information, and that at a time when it is still possible to modify the treatment and prevent unfortunate errors of omission or commission, which might lead to permanent disability.

The high costs of industrial insurance are not dependent upon the costs of individual average cases, but are caused by the exceedingly high cost of "permanent disability" court decisions where the sympathy of the jury is influenced by skilful and sometimes unscrupulous attorneys leading to such an increase in individual award that the amount of money expended upon one case would allow a fair compensation to be extended to many.

The public in general is conscious of the value of the x-ray in injuries and is quick to censure the physician who does not advise them. When patients present themselves to the roentgenologist for proper examination weeks after the original injury and an unsuspected fracture is found, much diplomacy must be used in order to avoid criminations of an acrimonious character.

It is true that the use of even the most complicated and costly x-ray apparatus is no guarantee of successful results, as there is nothing that will supplant clinical judgment, the trained osteopathic surgeon's tactile sense, and a thorough knowledge of the mechanics involved. A true surgeon may secure results even when handicapped by a lack of proper facilities and environment, but he is indeed fortunate if experience has been gained by the use of anatomical dissections, the studies of many x-ray plates of bones and joints, and a preceptorial training in the actual application of the didactic knowledge so obtained.

From a diagnostic standpoint we have found it advisable to x-ray our cases as a routine in all traumatic injuries. Only a flat refusal and an acceptance of the responsibility by the patient for consequences that may occur from lack of proper diagnosis and therefore lack of proper treatment, should persuade us to vary from this rule. Insurance companies covering liability have had this same experience. It is difficult to appear to advantage in a court and be asked, "Would an x-ray show the condition?," "Is it common practice for the surgeons in this community to use the x-ray in traumatic injuries?" and then be compelled to incriminate yourself when you are asked, "Did you have an x-ray taken?"

It is our practice to take x-ray pictures, using a technic which reveals the soft tissues as well as the bone tissue. It may be well to explain to those who do not do their own x-ray work that it is customary to x-ray extremities for fracture and other traumatic injuries by either a hard bone technic, in which the bones are visualized in full detail and the shadows of the soft tissues are obliterated, or by a modification of technic, causing the soft tissues to be shown in full detail while the penetration or voltage is lowered so that the bones cast only a shadow, light and without detail, revealing only their outline and position. The technic which I have found most useful is one with sufficient penetration or voltage to outline clearly the trabeculations of the Haversian canals in the bones, but not applied for a long enough time to "burn out" the soft tissues. In this type of picture one will find the greatest information for diagnosis. The views are taken in the standard anatomical positions, reserving for further views any modification of technic or change of position to bring out to the fullest extent any suspicious areas of interest which may be found in the first or standard views.

We have found that use of a tube with a moderately fine focal point, a target-film distance of 36 inches, the use of finely grained films without intensifying screens, and absolute immobilization of the part by appropriately placed sandbags, are necessary as a preliminary to the final dark room processing, which is the final court as to whether a high quality film is secured. Meticulous care in processing in the dark room, fresh solutions at 65 degrees Fahrenheit and time-temperature development accompanied by free and thorough washing of the film, with careful handling and drying are possible in the smallest of x-ray laboratories and the neglect of these fixed qualities will nullify the most expensive equipment and the most skilful technical knowledge. Expert results are dependent not so much upon the size or cost of the equipment as upon that fine attention to detail concerning the controllable factors.

When a suitable film of diagnostic value has

been secured, we have a shadowgraph, a pictorial view, showing the densities, morphological structure, and deviations from the normal in the area under observation. Experienced roentgenologists recognize easily those changes, not only of bone but also of soft tissues, which denote pathological processes. Just as knowledge, judgment, and skill, rather than expensive and cumbersome apparatus, make for a successful bone surgeon, so also those qualities of knowledge, judgment, and skill are necessary for the consulting radiologist.

The evaluation of the effects of trauma is dependent upon a knowledge of the tissues, their embryological formation, their growth and development, plus their physiological response to the stresses, strains and accidents that befall them.

Embryologically, the bones are composed of a stroma or network of soft connective tissue, whose interstices become impregnated and infiltrated by a deposit of calcium. Calcium is laid down to make bones rigid and stable so that the skeletal framework may make a firm fulcrum against which the muscles may exert their forcible action.

Bones are not dead, inanimate tissues, but on the contrary are living tissues, changing their size, shape, and calcium content to meet changing conditions. These reactions are not so rapid as the changes that occur in soft tissues in response to the laws of inflammation and repair, but are sufficiently rapid to show a decided difference in densities and structure on the x-ray film in the series of check-up views during the course of fracture treatment. Bone is subject to the same laws of inflammation and repair to which other connective tissues respond.

The evidence of the living and changing qualities in the densities of bone is observed by the transposition of calcium. Inactivity, in some instances, with blood and lymph stasis, are productive of a porosity of bone, a lessening of its localized calcium content, which the blood carries away to new areas of distribution. Increased density, on the other hand, with an increase in the deposit of calcium, is an evidence, in some instances, of lymph and blood anemia. The eburnated head of an ununited fractured neck of the femur is an example of this latter condition. The head that loses its vitality and blood supply becomes like an ivory ball, the neck becomes more porous and lacks in normal density; it is indefinite in outline of detailed structure and hazy.

The mechanical strains and stresses to which bone is subjected are followed by changes in structure to accommodate for the demands put upon it. Young bones are the most adaptable according to Wolff's law[3].

The long bones develop from osteogenetic areas composed of soft cartilaginous centers which receive the names epiphysis, diaphysis, and apophysis according to their relationship to the centrum of the bone. This development from ossification centers allows expansion and growth in the length of the bone while providing proper range of joint action and movement in the interim. A knowledge of the appearance according to the age in the development of these growth centers is necessary in diagnosing injures up to the age of maturity and is very helpful in understanding the fractures which occur in the neighborhood of joints even after the completion of the development of the skeletal framework.

The proper interpretation of the roentgenological signs of joint injuries is the first essential in properly treating such injuries. It is possible to secure results with good function in fractures of the shafts of long bones even when the anatomical alignment is very imperfect; but, when alignment is not carefully and correctly attained in joint injuries, we may find anatomical repair occurring with an absolute loss of function.

Joints must have their articulating surfaces in anatomical alignment, so that normal movements are obtainable after repair. Epiphyseal injuries include tears, fractures, and dislocations as well as nutritional disturbance, which must be carefully diagnosed and treated in order that normal function may be restored, also in order to prevent failure of bone development after injury. It is well for the roentgenologist, and the surgeon who is treating fractures, to have available and to use standard reference works which give the x-ray appearance of these epiphyseal formations at each year of life up to maturity. The accurate knowledge of the time at which each center becomes visible, and its characteristic shape and position, may prevent an unfortunate mistake which would lead to permanent disability, much to the chagrin of the surgeon and the lifelong handicap and discomfort of the patient.

A competent radiologist uses standard positions for the various views, before making a diagnosis with certainty. After the preliminary views are made in these standard positions, it may be well to take additional views to distort the fracture line, to make it more evident, or to bring out added detail in either soft tissue or bone by bringing the injured member in different relationship with the plate or the central ray.

During the time of incomplete development of the long bones in the neighborhood of joints, standard positions enable one to gauge the finer relationship of joint surfaces by the application of what is known as the "lining method." The "lining method" simply means plotting the angles and surfaces with geometric lines, which definitely portray any deviation from the normal angle of the plane surfaces of the joint or joints in question and comparing them with the normal.

Let us consider now that extremely important joint—the elbow. Here we have a joint of such an intricate character that normal movement is obtained only when perfect articulating surfaces are presented in several different planes of motion. Either a slight anatomical disalignment of the joint surfaces or a minimal change in the neck of the radius may be sufficient to block or limit full range of joint activity. How then may we proceed with confidence to align these injured parts, inasmuch as much of the joint proper is still not visualized by the x-ray, because the parts have not yet received full calcium content? The answer to this problem is found, in a correct conception of the relationship which each part bears to the others in the various ranges of motion of the joint. It is

necessary that the roentgenologist and the surgeon in collaboration should be able to recognize the departure from the normal alignment of each part entering into the injured joint by drawing and measuring the angles made by the shafts of the long bones and the relationship of the planes created by their articulating surfaces. When these normal angles are restored with the elbow immobilized in full flexion, then and then only in the great majority of cases of elbow injuries in adolescence, may the joint be restored to a possibility of normal function and normal development. An exception to the treatment and alignment in flexion is necessary in injuries to the olecranon process where treatment in extension is necessary to produce approximation, by obliterating excessive pull of the triceps muscle.

Now let us look at another most common injury—wrist fracture. Fracture in this region was the most commonly seen fracture during the hand-cranked automobile era. Today, in the self-starter automobile era, the old-type wrist injury is seldom seen, but another type of injury occurs often, and that is the "bumper" type, where the low-hung bumper of an automobile strikes an unsuspecting victim just below the knee, fracturing the tibia and fibula with a marked displacement occurring *en bloc*. Anatomical replacement of the fragments and immobilization of the joint may lead to repair, but the best result is obtained when the aftercare of the leg is such that moblization is restored almost as soon as the bones are sufficiently joined to bear muscular action.

Now let us give some consideration to the ankle after taking a lateral view. Posteriorly we will see the outline of the tendo Achillis attached to the os calcis as a base, and anteriorly the tibial outline closes the space, wherein there is so little connective tissue that a dark triangular area is shown. If this triangle is partially or completely filled with a hazy and more or less dense shadow, we may be sure that a rupture of some tissue has occurred and that the shadow is cast by the extravasated blood and serum. It would be well to treat that ankle with the skill and conservative treatment which experience demands, even though there is no apparent injury to the bone tissues nor any degree of sprain or tearing revealing avulsed periosteal or ligamentous portions. Remember the axiom, "When there is ecchymosis or extravasation of blood or serum in traumatic injuries continuity of tissue is broken, *something has torn.*"

Head injuries are also frequent. One of the common types of head injury is fracture of the bones of the face or fracture of the symphysis of the mandible as a result of impact against a shatter-proof windshield. No longer is it common to see bad lacerations caused by flying glass with possible death from a severed jugular vein, but the safety glass is causative of a characteristic lesion. The finely comminuted fragments and splinters of glass penetrate the skin and subcutaneous tissues, making an arduous job until all are finally picked out of the tissues. The x-ray sometimes reveals them in less superficial locations where their presence occasions a constant irritation and reminder to the patient.

Determination of the presence and the extent of injuries of the skull requires a routine method of x-ray examination which will give views of all the possible injured areas without the overlapping of confusing shadows cast by superimposed structures. It is customary to make stereoscopic views of the injured side laterally, one postero-anterior view, one basal view, and one lateral view of the opposite side, together with special views directed at any of the areas of suspected injury, such as those of the mandible or special facial positions. By the use of these pictures the fractures contrecoup, such as occur on the opposite side from the point of contact by explosive force or radiating fractures extending into the base, will not be overlooked. Intraoral, extraoral and occlusal films provide the intimate detailed data upon which to base proper evaluation of injuries and treatment of the maxilla, mandible, zygoma and other structures of the face and orbit.

Diagnosis of fractures associated with injuries of the nose may be easily made by using the occlusal film of dentistry, placing it in intimate contact with the nose laterally and with the upper corner slightly elevated to allow placement of the film well up onto the inner canthus of the eye. Views should be taken of each side to reveal fracture of the nasal bones, while a similar film held between the occlusal crowns of the teeth, with the central ray directed downward from above, will project the shadows of the nasal bones perpendicularly upon the film with the shadow of the septum thus calling attention to lateral deviations and displacements.

We shall now take up fractures of the upper cervical region—the atlas and axis. To properly visualize the atlas and axis in an anteroposterior view, it is necessary to project the central ray through the open mouth. A large cork placed in the patient's mouth will hold the jaws apart in order to gain the greatest area of vision, without the overlapping shadows of unrelated parts. The lateral view is taken at a distance of either 48 or 72 inches to minimize distortion of the shadows due to the plate having been placed at the outer border of the shoulder, thus increasing the distance of the neck from the plate.

It will be seen readily on the film that the lateral masses of the atlas are on either side below the lighter area of the occiput and that these two lateral masses are joined by the projections of the anterior and posterior arches. The odontoid process of the axis projects upward into this ring and is in truth occupying the position and functions as the body of the atlas. The axis shows in its full extent and relationship while a slight portion of the third cervical is in evidence.

The value of the "lining method," referred to previously, is that there is a known relationship in these shadows in their standard position of projection and that if any portion which belongs in one area is projected into a space that it should not occupy, there is necessarily either a fracture or dislocation.

Fractures of the spine occur—both of the bodies and of the various lighter arches and processes of bone. Compression fractures of the bodies are usually found where sudden flexion or hyperextension have occurred, at the points where the greatest range of motion is normally found. Thus the twelfth thoracic

and first lumbar vertebrae are most frequently injured.

The diagnosis of these fractures is most accurate when survey is made on large films; and then, by close coning on small films, details are brought out which show the finest of hairline fractures, confirmed by lateral as well as the standard anteroposterior films. In fact, it is by the lateral films that we are most likely to disclose fractures of the bodies of the vertebrae. Let not the seemingly insignificant line of fine fractures of the vertebral bodies mislead one into a false feeling of security. These are weight-bearing bones and it is true that the fracture line may seem indefinite and incomplete, but when dissolution of bone tissue has occurred in the body of a vertebra, the blood supply is changed by the active congestion and inflammation, and, if ignored or insufficiently treated, one may be distressed to find upon re-examination the unmistakable evidence of an increased porosity of bone and beginning compression, which will result in a wedge-shaped fragment and undoubtedly lead to serious trouble and functional disability.

Unless one is well informed as to the details of bone healing, one will be rather disturbed, on viewing follow-up pictures, by the broadening of the fracture line—the lesion seems to be so very much more apparent than it was on the original view taken at the time of the determination of the injury. Nevertheless, healing is occurring normally, because, according to the law of osteogenesis, the absorption of the calcium content takes place from the spicules and fragments of the fracture line where it is picked up again and laid down in the new trabeculations of the Haversian canals and the new stroma or network of connective tissue repair mortar. Healing also takes place largely by the formation of marginal bridges, or lipping to join a fellow either below or above, and then firmly anchoring them together very similarly to the process going on in typical hypertrophic osteoarthritis.

The condition, Kuemmell's disease, is often the result of fracture of the compression type occurring in the bodies of one or more vertebrae which went unrecognized or was improperly treated. Then, upon further stress and strain, softening of the body occurs, allowing the spine to become suddenly flexed and folding up like a hinge. Careful investigation of injuries of the spine by detailed physical examination and history taking with proper x-ray visualization of most likely areas of injury, together with the institution of proper and sufficient treatment, will prevent many of these most incapacitating deformities.

Anatomical apposition of the fragments of fractured bones is a worthy ambition on the part of the surgeon, but when one is confronted by the practice of some surgeons forcibly to tear the soft parts under a general anesthetic, one must realize that the patient is paying a great price for the seductive pain relieving influence of the anesthetic and the spectacular uncurbed exhibition of unleashed strength shown by the overambitious surgeon.

The first anatomical replacement that we make is only a beginning. Practical experience throughout the years teaches us that in many of the fractures slight overriding, angulation, or comminution of fragments are not barriers to restored function, but should prove stimuli to our own individual efforts to splint and cast in such manner that we may use pads, pressure and moulding to correct the faulty alignment slightly from day to day. The callus formation in the area of traumatized tissue is capable of being transposed until finally, like a sculptured clay model, the proper smoothness of bone surfaces is secured and the muscles and tendons are restored to their glistening and well-lubricated state.

We have spoken about the conservation of soft tissues. Let me explain that many of the tissue injuries, sprains, and contusions occur unaccompanied by dissolution of the continuity of the bone. Many times joints are affected through the stresses and strains of their ligaments. Ligaments and muscles are torn, frank hemorrhages occur, and blood clots are deposited beneath the fascial and muscular planes; sometimes there are only minute extravasations of blood and lymph, but it may be stated as a law, that where ecchymosis has occurred, a dissolution of the continuity and integrity of tissue is present and it behooves the surgeon to make absolutely certain by the best means at his command as to the extent and possible consequence of the accident.

Ice-covered streets and sidewalks increase the number of fracture cases coming to hospitals, clinics, and offices. Ligamentous strains, contusions, and fractures are seen in great numbers during the winter months. When warm weather arrives, there are always a few patients who come for x-ray examination to determine the reason why some part of their anatomy injured during the winter failed to recover fully. The evidence before us in many of these cases is that strains and fractures, incomplete separations, even much more serious injuries, were neglected at the time of occurrence; that the time for favorable results from treatment has passed, and that we now may do only those things which are palliative in nature.

It is impossible to diagnose fractures from the history, or from the reaction of the patient to pain, or from the first observation, alone. In order to render the high type of service of which we are capable, we should use the x-ray to diagnose the case, to follow treatment, and to be informed of the final end results at the time of dismissal.

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Ethics and Osteopathy

One of the greatest drawbacks in making osteopathy "march on" instead of "creep on" is the thought of the word "ethics." A profession such as osteopathy will not talk too much concerning the merits of its own profession—in the name of ethics. Ethics is an armed bully thrown into the osteopathic fraternity by opposing forces to prevent us from doing the things we know we should do.

Osteopathy has reached the stage when the shackles of ethics must be loosed . . . The answer lies in a modernized interpretation of the old-fashioned ethics. Salesmanship must be practiced, the public must be educated as to the merits of osteopathy.—Russell C. Erb, *The Osteopathic Digest* for March, 1937.

Blood Pressure in Relation to Obstetrical and Gynecological Conditions*

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An efficient circulation of the blood is necessary to maintain life and health. With the heart acting as a pump and the vessels serving as conduits, the systemic circulation including heart, arteries, arterioles, capillaries, venules, and veins is essentially a closed system, the volume of blood being fairly constant. The heart supplies the necessary driving force which keeps the volume of blood in the circulatory system constantly under pressure.

Each contraction of the left ventricle supplies a given amount of blood to the general circulation, and exerts a force on the column of blood already present. The tone of the smaller vessels resists the increase in pressure until the elastic walls of the aorta and the arterial tree give way before this force from the heart, and convert it to potential energy. When the heart relaxes in diastole and the force is no longer acting, the vessel walls return to their former size because of their elasticity, giving further impetus to the onward flow of the blood.

The blood vessels, through their musculature, are under the control of the vasomotor system, a part of the vegetative nervous system. Through this nervous mechanism adjustments in caliber may be made for the circulatory demands of certain organs or tissues at times of activity or need[1]

The state of tonus of the arterioles determines peripheral resistance. The force exerted by the contracting left ventricle is used in distending the elastic vessels near the heart and in overcoming the resistive action of the muscular coats, especially arterioles. *Blood pressure is the pressure exerted on the inclosed column of incompressible blood.* The most important factors in maintaining a uniform pressure are the energy provided by the heart, the elasticity of the blood vessel walls, and the peripheral resistance supplied chiefly by the arterioles. Lesser factors are the friction of the vessel lining and the viscosity of the blood.

The pressure exerted by the heart on the column of blood is maximal at the heart and decreases as the size of the vessels diminish. A marked fall in pressure occurs in the capillaries as the resistive arterioles are passed. By the combined action of the several factors in the arterial system, the flow through the capillaries is slow and fairly uniform, with slight increases with each systole of the heart. This state of affairs in the capillaries affords opportunity for the metabolic exchanges which rapidly take place. Under normal conditions the amount of blood moving through the capillary bed into the venous channels is equal to the output of the left heart in a given period of time.

For clinical purposes the estimation of the blood pressure must be made indirectly[2].

The sphygmomanometer is used to determine this pressure. In the course of the physical examination the blood pressure readings should be made before the examination of the chest and before the patient is fatigued. In taking blood pressure, and this is especially true in obstetrical and gynecological cases where the nervous system is already carrying an extra load, the patient should be as comfortable and relaxed as possible. Clothing must not constrict the arm, though a thin undergarment beneath the cuff may obviate any error from a cold cuff, and makes practically no difference in the pressure readings.

The diaphragm of the stethoscope is then placed firmly, but with little pressure, over the brachial artery. Pressure is released by the control valve and the first distinct sound indicates the systolic reading. Pressure is further decreased to the point where the clear sharp sound suddenly changes to a dull tone and almost immediately disappears. This point is usually taken as the diastolic reading, though some clinicians record the point of disappearance of sound as the diastolic. In health, the difference is only a few millimeters, but in disease the last phase—the period of dull sound— may be quite prolonged.

It may be necessary to make repeated examinations and to take the mean pressure of the several readings to obtain an accurate knowledge of the blood pressure of a patient. If arterial disease is suspected, readings should be made in both arms. The auscultatory method is more accurate for the physician with at least average hearing than the palpatory method, which usually shows a systolic blood pressure of 5 to 10 millimeters lower than the auscultatory method and which is of little actual value in diastolic readings.

French[3] says that blood pressure cannot be gauged accurately with the finger. It is most important to diagnose an abnormality only when blood pressure has been determined instrumentally. However, "prolongation of the first sound at the impulse or a ringing accentuation of the aortic second sound, may serve to indicate that there is high blood pressure when no instrument is at hand to verify the fact."

George R. Osborn[4] says that the sphygmomanometer is to the practical obstetrician what the reading glass is to the far-sighted man, because it enables him to make finer distinctions, and in case of threatened eclampsia he cannot make them too fine.

Richard C. Cabot[5] emphasizes the fact that blood pressure readings give a more accurate picture than do urinalyses. He cites cases of renal disease entirely free from albuminuria or casts in which diagnosis was made possible by blood pressure readings.

The importance of blood pressure readings in obstetrics cannot be overestimated. To quote Bland and Montgomery[6]: "Of all instruments, the sphygmomanometer is most useful in obstetric practice. It is comparable to the barometer; to the observing obstetrician it indicates in fractions—in millimeters of mercury—cloudy skies or oncoming storms." This broad statement was brought to my attention by Dr. Margaret H. Jones, D.O., who shares this opinion. An altered blood pressure may indicate the trend

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toward toxemia—that the patient is overexerting, that vitality is slipping below par—earlier than any other symptom.

Numerous writers upon toxemias of pregnancy attribute first rank to blood pressure in the symptomatology, and as a guide to prophylactic and curative treatment. Osborn[4] says:

> Blood pressure readings taken by one individual may vary slightly from those taken by another, but for practical purposes they are equally valuable. These variations are due to the difference in acuteness of hearing, to the difference in stethoscopes and the different types or kinds of sphygmomanometers used. Even the personality of the physician and the class of patients might account for differences. . . . It is important that each individual develop a sense of reading pressure that means something to him, and he can develop that sense only by routine readings and records.

Davis[7] says:

> To have an adequate conception of diseases of the circulatory system during gestation, it is essential to recognize that pregnancy itself produces certain physiological alterations in the circulatory apparatus. In the early months of pregnancy these changes are slight, but as term is approached they become more evident.

The heart during pregnancy shows evidence of a slight physiologic hypertrophy and the total volume of circulating blood is increased out of proportion to the gain in body weight, representing a greater percentage of the total weight than in the nonpregnant state. Some symptoms which might lead one to look for circulatory upset, but which in pregnancy are not pathological, are: visable pulsations in the veins of the neck which are variable; functional heart murmurs — always systolic in time — if they occur in hearts which show no other abnormal sign and if the patient's response to effort is good; accentuation of second pulmonic sound; a moderate increase in the pulse rate, without subjective manifestations, which occurs in the so-called neurotic heart or as the result of overexertion; a nonprogressive edema of feet and ankles especially late in the day, after exercise, or during warm weather; a certain duskiness of the lips and finger nails which may be noted during labor even in women who have perfectly normal hearts. Bland and Montgomery[6] say:

> Under normal conditions the systolic blood pressure is 110 to 120 millimeters. Mild toxic vomiting is associated with a lowering of blood pressure; severe vomiting with a progressive and marked decline. In preëclampsia, on the contrary, there is a marked and progressive rise, and in eclampsia the blood pressure may exceed 200 millimeters.
>
> A fluctuation from 110 to 130 has no significance, but an alteration well below or well above the points named is ominous. A rise maintained above 135 or 140 is abnormal and is an expression of underlying toxemia.

Seitz[8] comments as follows:

> The disease picture of essential hypertension is a physiologic adaptation process carried to an extreme. If the hypertension transgresses certain limits in degree and duration it is bound to affect the organism seriously.

Vascular tension is an important factor in the mechanism of the toxemias of pregnancy.

Adair[9] and De Snoo[10] have shown that essential hypertension is the characteristic feature of many cases of toxemia of pregnancy. Since vasomotor liability may be used as an index of vascular tension, and since patients with hypertension show a response of greater rise in blood pressure to change in external temperature than the average individual, the "cold test"—checking blood pressure reaction upon immersion of the hand in water approximately one degree centigrade—is being tried out as an aid in the diagnosis and prognosis of vascular disturbances of pregnancy. Men who are doing experimental work on this test refrain, as yet, from decision as to its efficacy, but results already recorded indicate that it will be useful in the early diagnosis of hypertension or potential hypertension cases.

Dieckmann and Michel[11], using this test in a study of 190 patients, found that both pregnant and nonpregnant subjects with a family history of hypertension gave more marked responses than subjects without such a family history:

> In a group of patients with toxemia of pregnancy, no uniform results were noted during the preëclamptic period or during the eclampsia.
>
> Those patients in whose cases a diagnosis of chronic nephritis had been made gave marked responses before, as well as after, delivery. Subsequent laboratory analyses indicated that all of these patients had hypertension at that time or had had it at an earlier period and that there was either slight or marked evidence of a renal pathologic process in many of them. Only a few, however, could be classified as having chronic glomerulonephritis.

The patients with chronic nephritis exhibited marked vasomotor lability, the untoward reactions identifying the condition as a vascular disturbance.

The results of another series of tests are significant showing "that in no case in which the response to the cold test has been persistently normal, has toxemia developed, and that in all cases in which toxemia has developed a hypertensive reaction has been demonstrated. Of the patients who have manifested a definitely exaggerated reaction, . . . 33 per cent have presented the usual signs of toxemia in the latter months of pregnancy."[12] Osborn[4] says:

> A general vasodilation resulting from the changes in the endocrines or from a toxin attendant upon the pregnant state may cause a low pressure. . . . It is my opinion that whatever toxemia may be present in early pregnancy is not directly a factor in reducing the pressure but rather the reverse, and that the lowered tension commonly noticed is the result of depletion of body fluids in the vomiting cases and of endocrine changes which cause vasodilation. Many primiparae at the inception of their nausea and vomiting period have a slight rise of pressure. Focal infections are a frequent cause of hypertension which persists throughout the pregnancy.
>
> Primiparae past thirty years of age are more prone to show hypertension than hypotension and the succeeding pregnancies maintain a normal pressure. The incidence of the toxemia in the latter part of pregnancy is greater in primiparae. . . .
>
> In concealed excessive hemorrhages with abruptio placentae, the blood pressure may be high, but in these cases the cause is always a toxemia and is preceded by high blood pressure, and the hemorrhage due to apoplexy of the uterine and associated blood vessels may not be sufficient in volume to lower the blood pressure although it is sufficient to ruin the uterus and destroy the fetus.
>
> I know of no characteristic feature or phase of the high blood pressure in abruptio placentae that would differentiate it from the high pressure that precedes eclampsia. As they may occur simultaneously, there probably is no differentiating characteristic other than that the diastolic and

systolic pressures seem more apt to rise suddenly and as abruptio placentae occurs often in low-grade nephritis cases, it behooves one to exercise even more caution where nephritis complicates pregnancy. . . .

High blood pressure does not always indicate threatened eclampsia, but a rising blood pressure, accompanied by other toxic symptoms or not, is cause for alarm. Frequently a pregnant patient has had high blood pressure before conception, and if it remains stationary, it need not cause alarm but ought always to be watched. . . .

The diastolic pressure is the more delicate and better indicator of serious toxic states in pregnancy than is the systolic pressure. This is because the diastolic pressure is the measure of capillary resistance, and in toxemias we have constriction or blocking of the capillaries, particularly in the liver and kidneys, and the greater the constriction or more complete the blocking, the higher will be the diastolic pressure. [We will interrupt our quotation here to note that vasospasm and vasodilation influence urinary output and this takes us back to our nerve mechanism which regulates fluid output as well as the blood pressure.]

The systolic pressure indicates the power of the ventricle, and in the case of a weak ventricle we might have a highly toxic state with a moderate systolic pressure, *but I have never seen a low diastolic pressure in eclampsia, or in threatened eclampsia,* and when we think of what the diastolic pressure indicates, its rise means a greater capillary resistance somewhere and consequently greater toxemia. [Italics ours.]

Quoting from Bland and Montgomery[6] again:

During labor, owing to the exertion of the primary and secondary expulsive forces, the blood pressure ascends to 140 mm. or more. Usually a marked fall is observed after the rupture of the membranes, but fluctuations supervene as soon as the contractions recur. After completion of labor, the pressure falls rapidly; after delivery, especially if blood loss is excessive, it becomes subnormal and continues thus during the lying-in period.

Obstetrical hemorrhage and shock always cause a lowering of blood pressure and are factors to be considered during pregnancy, labor, and the puerperium. A very important cause of hemorrhage in obstetrical cases is the excessive use of drugs according to studies made in the Swedish Hospital, Minneapolis, Minn.[13]

BLOOD PRESSURE IN GYNECOLOGICAL CASES

Blood pressure consideration in the diagnosis, treatment, and prognosis of obstetrical cases is necessary due partly to the emergency aspect of that branch of medical practice. However, it can be scarcely more important in obstetrics than in the field of gynecology, much of which is follow-up work —the result of pathology of obstetrics. In gynecological practice I have found that high or low blood pressures may be caused by pelvic pathology.

Whether the high pressure patients started with lowered vitality and accompanying low pressure, I have no way of knowing. One would expect that to have been the case, with cumulative reflex ill effects eventually producing the high pressure.

Records of thirty-seven cases, showing the age of the patient, amount of pelvic involvement (using one to four plus to indicate degree,) and blood pressure readings were taken from my case record file. Since the studies were not made with the purpose of blood pressure determination, it is reasonable to grant that the blood pressure readings may be affected somewhat by other than gynecological causes. However, the pelvic symptoms were outstanding and

AGE	BLOOD PRESSURE	PELVIC INVOLVEMENT
20	115-75	++
24	116-72	+++
24	142-82	++
24	133-70	++
24	110-73	+++
26	120-60	++
27	112-66	+++
27	107-58	+
28	117-72	++++
28	128-76	+
29	94-60	++
30	106-80	++
30	165-73	+++
31	103-72	++++
32	134-78	+
33	124-76	++++
33	116-76	+++
33	110-78	+++
33	115-76	+++
35	102-66	+++
37	110-65	+
38	128-76	+
40	132-62	+++
40	127-84	++
41	97-63	+++
42	164-114	+++
43	142-82	++
46	128-78	+++
48	166-86	+++
50	186-110	+++
51	110-73	++++
53	130-88	+++
53	112-76	+++
53	112-76	+++
56	110-67	+
57	168-98	+++
66	132-82	++

apparently were mainly responsible. Several cases in the series had pronounced pelvic disturbances and blood pressure readings which were high considering the age of the patients. Two gave histories of hemiplegia, having come for examination and for treatment of the paralysis. The blood pressure readings in five of the cases are quite low, fourteen being lower than 115 millimeters which we consider low normal ["One of the largest insurance companies recently issued a new table using a blood pressure reading of 120 millimeters systolic and 80 millimeters diastolic as the ideal normal at age twenty and giving a systolic reading of 138 millimeters as the highest normal for any age."[14]] According to Barton and Yater[15], 123 to 126 millimeters is normal for ages fifteen to forty, and 128 to 133 millimeters is normal for ages forty to sixty. In general practice we have found that patients whose systolic pressure is below 115 or 120 millimeters have lowered vitality, caused by focal infection, overwork, undernourishment, or pelvic pathology.

Many of these cases in our gynecological series showed local pelvic symptoms as sacral pain, pain in the iliac fossae, dragging down sensation, leukorrhea, pruritis, but much of the effect of the pathology was reflex, causing malaise, headache, indigestion, melancholia.

The most common osteopathic lesion I have found is the occipitoatlantal, with a "clamped-in" sensation to the patient and very rigid condition of musculature at the base of the skull.

A lesioned condition in the cervical and upper thoracic regions necessarily affects the circulation of the blood and the blood pressure. Many of these gynecological symptoms are produced as a result of abnormal conditions developed during pregnancy and childbirth and in some instances improper management. Lacerations and their aftereffects head the list.

Margaret H. Jones in her article "The Place of Osteopathy in Obstetrics"[16] urges osteopathic phy-

sicians to give childbearing women the benefit of their care. She says:

General osteopathic treatment correcting lesions as found once every two or three weeks during the pregnancy period maintains the patient's resistance, assures proper body metabolism for both the mother and child, stimulates elimination of the dreaded toxemias of pregnancy and in every way makes for the patient's betterment. Albuminuria of pregancy has been ascribed by medical authors to lordosis. This surely is an osteopathic principle. Pregnancy has been wisely referred to as the test of bodily soundness. Therefore osteopathic care during gestation is superior to anything else the world offers. . . .

Postpartum care includes osteopathic attention to the cervical, upper dorsal and pelvic spinal areas especially. . . .

Dr. DeLee says, "During labor, the sacroiliac synchondrosis is loose, the ilium may be dislocated on the sacrum. Milder cases of injury to the sacroiliac joints are undoubtedly commoner than is generally believed. Such injury explains many of the prolonged backaches and neurasthenic states following parturition."

It is difficult to prove the amount of lesion produced reflexly to the various regions of the spine by gynecological and obstetrical pathology. That is determined by the natural resistance of the patient and the extent of the pathology in the pelvis. We know that in extreme cases of pelvic involvement, no function of the body is normal, therefore it is logical to conclude that no part of the spinal column escapes entirely the effects of these lesions. We also know that malalignment of the bony foundation—the sacrum and ilia—causes more or less irregularity of all spinal articulations, and interference with their normal motion. This necessarily affects the function of nerves emerging from any particular region involved.

George J. Conley[17] says:

If Dr. Still had contributed nothing more to the healing art than his concept of the lesion of the lumbosacroiliac area, the women of the land should rise up and call him "blessed" and should insist upon a place for him in the medical "Hall of Fame." . . .

Lesions of this area are of importance to surgeons and obstetricians, as well as to the man in the general field. . . . Their direct influence upon the sacral plexus of nerves, the second strongest and largest in the body, is both powerful and far reaching. . . .

Ovarian and tubal disorders, essential hemorrhage from the womb, vaginismus, leukorrhea, and intractable suboccipital headaches, all may have their origin in the lesions of the lumbosacroiliac area. . . .

Sacroiliac subluxations and lacerations, both cervical and perineal, are the two most important etiological factors in gynecology. Of these the former is the foremost. . . .

Palpation of the sacroiliac articulations together with comparison of the two sides by actual measurement will cause the thinking doctor to consider the anatomy of the nervous system, to reason from cause to effect, and thus to link together the symptomatology and pathology, making possible a specific diagnosis and subsequently effective treatment.

In studying the far-reaching reflex effects on blood supply and blood pressure which pelvic visceral lesions and lumbosacroiliac subluxations produce, we continue a quotation from Dr. Conley:

Let us consider for a moment the sacral plexus. It lies immediately in front of the body of the fifth lumbar and the first two sacral segments, receiving the very strong anterior rami of the fifth lumbar, the first and second sacral nerves, and portions of the fourth lumbar and third and fourth sacral nerves. It is closely connected with the pudendal plexus and through this with the great hypergastric plexus of the sympathetic system, sometimes called the pelvic brain. One can readily see that these nerve ramifications reach all the pelvic viscera, also the lower extremities.

Any abnormal position of the sacroiliac articulation causes a disturbance in the structures, muscular and ligamentous, surrounding it. Tightened ligaments and contracted muscles act as irritants to nerves, and also as impediments to blood flow in vessels passing under or through them. The lateral sacral artery, for instance, furnishes nutrition to the anterior divisions of the sacral nerves. It also gives off branches anastomosing with the terminals of the anterior and posterior spinal arteries. It lies in front of the pyriformis muscle, and generally perforates that structure in reaching the spinal canal. Continued contraction, therefore, of the pyriformis, due to malposition of the sacroiliac articulation, will interfere with the nutrition of the cells of origin of the whole sacral plexus, and eventually cause structural changes in the nerve trunks themselves. Perversion of function is an inevitable result. . . .

Therefore, in diagnosing pelvic disorders, the first point to examine is the integrity of the sacroiliac articulations for possible irritations of the sacral plexus of nerves. . . . It behooves the obstetrician to see to it that the innominates are in their normal position before discharging the patient.

With the repair of lacerations and the reduction of innominate subluxations women will be freed from nearly all of the pathological manifestations dependent upon parturition.

Discussing the effect of osteopathic lesions upon blood circulation and blood pressure, the late Yale Castilio[18] has the following to say:

The upper four or five thoracic sympathetic ganglia are usually aggregated to form the stellate ganglion, which lies opposite the bodies of the second, third, and fourth dorsal vertebrae. Osteopathic lesions of the upper four or five thoracic vertebrae readily and regularly disturb the function of this ganglion as well as that of related cord segments. . . .

The ascending aorta, and the arch, are supplied by sympathetic nerves having their origin in the upper four or five thoracic segments of the cord and their termination, mainly, in the stellate ganglion. Postganglionic fibers continue the path to the walls of the vessel. They are vasomotor to the vessels of the aortic wall, the vasa vasorum. They supply the smooth muscle of the aorta.

The vagus supplies sympathetic nerves to the aorta over the same branches that it sends to the heart. Of particular importance is the depressor nerve, afferent in function, which plays an essential part in the regulation of blood pressure. It has been demonstrated that with every rise of pressure within the aorta an impulse passes centralward over this nerve. These impulses, then, occur with every contraction of the ventricles. Stimulation of the sensory terminals of this nerve by increase of pressure within the aorta induces, reflexly over efferent fibers of the vagus, a decrease in the force and rate of the heart beat. At the same time, through reflex influences over the sympathetic center in the medulla oblongata, impulses are sent out which cause general vasodilation.

It is easy to visualize the probable effects of upper thoracic lesions on this delicate mechanism. The characteristic changes, remote effects, of such lesions when the nerves entering into the supply to the aorta were involved would be congestion, nutritional embarrassment, and perverted metabolism in the walls of the aorta where lies the sensory end plates of the depressor nerve. Under such circumstances this nerve could not be expected to function normally, and variations from the normal blood pressure in either direction might be expected to, and indeed do,

occur. The importance to the organism of normal blood pressure, and the dangers inherent in any considerable departure from it in either direction, are too well known to require comment. . . .

The more important organs frequently to become diseased as the result of osteopathic lesions of the upper four or five thoracic verterbrae are the heart, lungs, and aorta. When one considers, as the result of osteopathic lesions in this region, the myocardial weakness with attendant impairment of the general circulation, the pulmonary congestion and consequent interference with the absorption of oxygen and the liberation of carbon dioxide, and the metabolic disturbances in the walls of the aorta with associated perversion of function of the depressor nerve and embarrassment of the blood pressure regulating mechanism the application, in early osteopathic literature, of the term "nutrition center" to this portion of the spinal cord is easily understood.

It is not in any way injurious to reduce blood pressure in a patient if treatment leaves the patient with stronger heart action. To obtain satisfactory results in the treatment of pathological blood pressure conditions, it is necessary to properly align the body mechanism and in this manner relieve irritation to the nerves controlling blood supply.

M. A. Lane, in his book, "Dr. A. T. Still, Founder of Osteopathy,"[19] says, "Still, studying anatomy, had the rare power of perception to see that the backbone is the keystone of the body, and that this imperial palace of the imperial tissue of the body—the nerve—was the source of constant disturbance of the circulation of the blood."

Foci of infections and reflex irritations must be removed as rapidly as the condition of the patient will warrant. Treatment includes rest, care of diet, proper elimination, osteopathic manipulative treatment, and surgery according to indications in the given case.

Recognizing that normal circulation of the blood and normal range of blood pressure are necessary for the body functions to be carried on physiologically, we remember that Dr. A. T. Still said, "The rule of the artery is supreme."

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Developmental Anomalies*

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If osteopathic physicians realize how important is structural and hygienic integrity for the future of the race, as they now realize how important is this integrity for the future of the individual, a great advance is made toward racial betterment.

In the study of phylogeny, the human structure has been taken as the apex of perfection. Perhaps the present human race represents the highest known development of certain morphological relations. We are not justified in the view that no finer development may follow us.

Indeed, from a philosophical standpoint, we should expect increasing efficiency of human bodies. Such increasing efficiency should subtend increasing happiness for the human race, and increasing values for what are commonly called spiritual attainments.

Phylogeny has been defined as a "search for perfection." Certain individual variations seem to lead to increased efficiency, such as the increased rigidity of the lumbosacral articulations in the human race. Associated with the apparent search for stronger spines are many individual weaknesses of structure.

If it be kept in mind that our present organic relations may be steps in the search for perfection, the processes in adaptation and even in certain atavisms become explicable.

Departures from ordinary structures which can be considered steps toward improvement must increase the strength or longevity of the individual, or must increase his resistance to disease or his ability to utilize his environment.

Any attempt to explain the retention of certain structures characteristic of phylogeny, while others apparently more valuable are discarded, is doomed to failure by our present ignorance. Shumway[1] has suggested an explanation in his theory of organizators, that is, tissues which may be preserved in phylogeny because they induce differentiation of surrounding embryonic tissues. Certain experimental findings support Shumway's views.

The biochemical relations of phylogenesis have been discussed by H. Gideon Wells[2]. It must be remembered that chemical subtends histological structure, very much as histological subtends anatomical structure. Much further study is required.

This paper is an attempt to relate human deformities with certain anomalies found in the animals at Sunny Slope. The animals were bred on the place, according to standards reported elsewhere[3].

ETIOLOGY

Deformities do not occur without cause, though in many cases this cause is not recognizable.

*Delivered before the mid-winter convention of the California Osteopathic Association at San Jose, February 13, 1937.

In past times, human monsters were supposed to follow the sins of the parents. Sex relations of humans with trees, animals, devils, or ancient fabulous gods were described. Even inorganic substances or forces, such as winds, earthquakes or waves, were sometimes mentioned as the parents of deformed children. Even now many fables persist among the unlearned.

Certain conditions which cause abnormal development have been studied in many biological laboratories. These results may be stated in a few words:

For all plants and animals it may be said that any abnormal condition which affects either parent may affect the gametes and thus increase the percentage of deformed progeny. Experimental animals, previously normal and parents of normal young, have been caused to produce abnormal young by inhalations of alcohol, mercury, ether, chloroform, iodine, and other volatile drugs or by adding certain drugs to their food. Eggs of normal fowls have been placed in incubators in which volatile drugs or abnormal proportions of oxygen, carbon dioxide, water and nitrogen surround the eggs during incubation. A large proportion of deformities results.

For unicellular animals and plants and for those animals whose reproductive cells conjugate after extrusion from the parental organisms, it may be said that any departure from the normal environment of either gamete, or of the fertilized ovum, increases the percentage of deformed progeny.

In mammals, abnormal maternal conditions during pregancy may exert harmful effects and produce deformities.

LESIONS IN ETIOLOGY

The reports from the Sunny Slope Laboratory concern mammals only. These reports indicate that the vertebral joint lesion in either parent must be added to the long list of etiological factors which increase the percentage of deformed offspring.

During early years at Sunny Slope, deformed and "runty" animals occasionally were born. By removing these and their parents from the breeding stock, families were developed in which no developmental anomalies ever occurred.

Vertebral lesions were the only recognizable causes of abnormal development thereafter. When both parents were lesioned, sterility was the rule. When either parent was lesioned, deformed progeny, abortions or sterility were inevitable. In this paper[4] the progeny of parents with upper lumbar lesions are described.

HUMAN MONSTERS

Monsters rarely live after birth. Usually the cause of the abnormal development is not known. It is apparent that extremely pronounced developmental faults are incompatible with life: obviously these cause no disease. When the defect is relatively slight, the individual may perpetuate some abnormal structure in his descendants, and he may suffer more or less seriously from the functional disturbances due to the aberrant structures.

Osteopathic literature contains several reports of the birth of monsters.

Billington[5] reported a case in which a placenta was adhered to the brain, there was a meningocele on the occiput, cleft palate, hare lip, and no eyes. It was a stillborn with posterior sacral presentation. From the chin down it was a normal baby. The mother stated that she had felt motion the day of the birth.

Meredith[6] sent an interesting monster to the Sunny Slope Laboratory. It had a single eye not quite in the center of the forehead. Phinney sent a specimen of anencephalus to the Sunny Slope Laboratory. No report of this has been found. The skeleton is preserved.

Taylor[7] reported a case of polyhydramnios with anencephaly.

Another physician reported Cesarean delivery of a thoracopagus, in this case male twins sharing one placenta, one sternum, and one umbilicus.

Monsters are sometimes born among animals though none have yet been found at Sunny Slope.

SKELETAL ANOMALIES

The skeleton of mammals shows a bilateral symmetry which is almost or quite perfect at birth, among animals, though the human skeleton rather often presents asymmetries. Skeletal anomalies may be grouped according to their apparent causes.

Faulty histogenesis is associated with some aberrant processes in the utilization of lime. These defects have not been found at Sunny Slope. Weak bones so developed fracture easily in utero and they may be repaired in normal or abnormal positions. Marked deformities of the limbs may be caused in this manner.

Osteogenesis imperfecta, an early arrest in the development of bony tissue resulting in multiple and repeated intrauterine fractures of bones, is easily recognized in typical cases, in which case life usually is impossible. In atypical cases in which the developmental arrest occurred at a later period, the diagnosis may be difficult. Weber[8] described a typical case and discussed in detail the embryologic relations of the defect.

Intrauterine fracture and union of the human tibia and fibula alone was reported by Martin[9]. Since recovery seemed to be complete after correction of deformity, it may be inferred that little or no abnormal osteogenesis was present.

Developmental arrest may result in less than the normal number or size of skeletal elements, or there may be arrest in those developmental factors which terminate any given process. Thus the number of vertebrae may be increased or diminished by arrest of development, by arrest or delay in the factors which stop segmentation, or by premature cessation in the grouping of the sclerotomes at the coccyx and sacrum. Generally speaking, the earlier the arrest of growth, the more marked the deformity is apt to be. Developmental arrest in later stages tends to produce moderate anomalies. These often occur in animals and in humans.

Mild degrees of anomaly, such as have been called "stigmata of degeneracy" when they occur in visible tissues, occur also in the skeleton. These

rarely are concerned in etiology, though they may, indirectly, be concerned in causing disorders of sensation or function.

HUMAN SKULL AND BRAIN

The relations of the skull and the brain in anomalous development present many puzzles. The brain itself exemplifies, in certain respects, the recapitulation theory. In other respects, some sudden new formation or function seems to have been superimposed upon existing structures: this is illustrated especially in the human cerebral centers for speech, writing, stereoagnosis and other functions, and in the sharp development of the peripheral layer of bipolar cells in the cortex, whose functional activity seems to be essential to human consciousness.

The study of defective brains and skulls shows the two to be intimately related. Deformities of brain structure have not been found in embryos whose skulls have not been deformed, while deformities of both skull and brain have been reported for many human embryos and adults.

In the case of humans with marked cerebral defect, stillbirth or speedy death prevents any adequate study of behavior. Humans with less marked cerebral defect may live for years, showing varying degrees and qualities of mental defects. There is some reason for attributing certain cases of hysteria, crime, genius and certain idiosyncrasies of behavior to defective cerebral development. Berry's recent book[10] is of interest in this connection.

Moderate defects of the human skull are not easily recognized. Deformities which can be recognized may be found occasionally in persons of normal or even supernormal abilities. When such defects are associated with nervous or mental disturbances, the prognosis is clouded thereby.

ANIMAL SKULL AND BRAIN

Experimental studies of mild degrees of cerebral anomaly and of the effects of these anomalies upon behavior have been reported from many laboratories. Animals which have been subjected to any of the conditions causing deformity have borne young showing defects of the brain and skull. When such deformities were not incompatible with life, the affected individuals showed aberrant behaviour. In the case of laboratory animals, a sort of inertia alternating with periods of unbalanced and inexplicable motor activity has been reported often.

Experiments at the Sunny Slope Laboratory were devoted to the effects of vertebral lesions. The progeny of lesioned parents always showed asymmetry of the skull and brain, together with other anomalies, and these young were always less active, less cleanly and more easily frightened than were the progeny of normal parents of the same age, heredity, and environment. Atypical behavior of these defective progeny persisted throughout life.

ANOMALIES OF LIMBS

Laughlin[11], Hulett[12] and others have described the pathology and treatment of congenital dislocation of the hip. Jones[13] discussed several etiological factors concerned in developmental defects. Beckwith[14] described the place of deformities of the feet in the cause of scoliosis and other postural abnormalities.

Congenital club-foot, club-hand, and other anomalies of human feet, ankles, legs and wrists all are easily recognized at birth.

A condition resembling talipes varus has been found in kittens born of mother with accidental lumbar lesions. These defects are not easily found in animals because of the small size of their paws.

HUMAN VERTEBRAE

Ussher[15] discussed the etiological relations of spinal defects with visceral disease in rather an osteopathic manner. Tasker[16], White[17] and others have described many anomalies found in x-ray plates.

The atlas and axis often show anomalous development. Their phylogenetic development and their place between the vertebrae of typical structure and the skull bones, renders anomaly rather more probable for them than for other cervical vertebrae. The anomalies reported for humans have been found in guinea pigs at Sunny Slope.

Deformities of other cervical vertebrae are common causes of congenital torticollis. This condition is sometimes due to a shortening of muscles or ligaments on one side of the neck, and this to a fixed abnormal position of the head in utero. Such a condition might occur late in pregnancy. Disturbances in the structure of the cervical vertebrae are often associated with congenital wryneck, and in animals as in humans it is often difficult to determine whether the soft-tissue shortening or the bony defect is primary. In either case, congenital wryneck is an efficient cause of other cervical and of upper thoracic lesions.

A study of the anomalies of the lumbar vertebrae in human cases has been reported in the *Clinical Osteopathy*[18]. One hundred consecutive cases were collected in which three or more films showed the outlines of all the lumbar vertebrae, the sacrum and twelfth ribs. This group was called "the lumbar bones" for the sake of brevity and convenience. Every accessible group of films with these characteristics was included, and all cases were excluded which failed to meet these requirements. No other criterion than the fact of visibility was considered in the selection of the films.

In thirty-six cases with no recognizable developmental anomaly of the lumbar bones, no visceral deformity was found except retrocecal appendix. This is considered by certain writers to be an anomaly.

In thirty cases of definite deformity of the lumbar bones every one showed developmental anomalies of one or more abdominal viscera. Visceral inflammations were about evenly divided between those with normal and those with deformed lumbar bones.

It would be interesting to study these anomalies with reference to embryonic segmental relations. At this time, such a study is impracticable, because of the difficulties presented. The embryological relations of the lumbar bones have not been adequately determined, either from the standpoint of segmentation or of time.

Congenital anomalies of the spine have been noted as causing persistent human backache by Phinney[19], Hoskins[20], Kraus[21], Schwab[22] and other osteopathic writers. We do not know whether animals have backache or not.

HUMAN RIBS

Cervical ribs often cause discomfort, more serious when the condition is unilateral than when all the structures are symmetrical. Conley[23] described an interesting case.

Lumbar ribs may remain undetected throughout life, being found only at autopsy or in x-ray plates. They often cause discomfort, especially when the condition is unilateral or asymmetrical.

Deformities of ribs include anomalies of form, size, and relations with vertebrae and sternum. Fusion of two or more ribs, bifurcation of one or more ribs, absence of part of a rib or of two or several ribs, usually unilaterally, has been reported. Hatch and Plume[24] reported marked deformities of ribs in a girl seven years old, with fusion, bifurcation, and other anomalies of the ribs.

Defective development of the thorax as a whole seems to be postnatal more often than congenital. Rickets and other nutritional disorders rarely remain unrecognized.

ANIMAL VERTEBRAE AND RIBS

Disturbed bony relations have produced permanent wryneck in animals. Unilateral fusion of cervical vertebrae has been found in guinea pigs born of abnormal parents at Sunny Slope.

Anomalies found in the ribs and vertebrae of the progeny of lesioned animals at Sunny Slope include partial or complete coalescence of ribs with other ribs or with vertebrae, or of vertebrae with one another; absence of one or more ribs, and asymmetries of one or several processes, laminae or bodies of vertebrae. These bony anomalies have not been described in detail, chiefly because of the difficulties presented by the small size and the cartilaginous quality of the bones in very young animals, and the difficulty of distinguishing between congenital and acquired bony pathology in older animals. Asymmetry of the pelvis is less easily recognized than is asymmetry of the skull and of the viscera, in animals, whereas human anomalies of the pelvis and the lumbar vertebrae are very easily recognized.

Deformities of heart, lungs, digestive tract, genitourinary systems and other tissues have appeared in the progeny of lesioned animals at Sunny Slope, and these bear marked resemblances to similar conditions found in human subjects, and in the deformed animals produced in various biological laboratories through the agencies already mentioned. These cases of developmental defect are being collected for later publication.

Sunny Slope Laboratory.

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Diagnosis of Acute Brain Injuries

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We are living in an age of speed, both of travel and of thought. Cranial injuries of a few decades ago were the result usually of falls, train or tramcar wrecks, bicycle accidents, and fast moving games such as hockey and football. Today the automobile has increased the incidence of brain injuries many times over former years.

In general, we should understand that severe brain injuries need not be associated with fracture of the skull. There are cases in which fracture of the skull is an advantage to the patient because it opens an avenue of escape for the fluids which are under great pressure.

There are two general types of skull fracture:

(a) The direct fracture, in which a blow striking the skull depresses the bone, producing a denting, if you will, which results in a fracture of the outer table alone, or of the inner table alone, or of both. In case both tables are fractured, the inner table is depressed beyond the line of the outer table. Damage to the brain is, therefore, greater than the depression felt upon the skull.

(b) The indirect fracture, usually linear, extending away from the line of force and running toward the base of the skull. This is usually a simple line fracture, although it may be a multiple comminuted fracture. When the force is very great, the line of force approximates the pole on the side of force to its fellow on the opposite side and the fracture may radiate to the opposite side, producing the fracture of contrecoup.

The fracture into the base results from the force extending from the thick bone of the vault into the thinner bone of the base, especially in the region of the temporal fossae. Often the petrous portion of the temporal bone is cracked, and bleeding from the ear occurs in some cases. When the force extends toward the cribriform plate, bleeding from the nose is seen.

The most serious of all types of cranial fractures are those of the posterior vault, especially beneath the tentorium cerebelli. Here lie the vital centers and the effects of medullary compression and edema are usually seen early.

Symptoms.—Loss of consciousness for prolonged periods or momentarily is a prominent symptom. Some very severe cases do not lose consciousness immediately following the injury but perhaps days or weeks later. The headache is throbbing, beating, or bursting in character. It is rarely absent. It is caused by hemorrhage or an increase in the cerebrospinal fluid and is relieved by lumbar puncture or decompression. Nausea usually is present and results from shock. Vomiting takes place as a rule only if the injury occurs shortly following a meal.

Objectively, one would expect to find damaged scalp tissue, contusions, hematomas, etc., in the region of the blow. Positive evidence of fracture is made by incision through a hematoma, or inspection by probing of a contusion, or by x-ray. It must be understood that a rather extensive fracture may occur with little or no brain damage. In cases of bleeding from the ears or nose, only the presence of cerebrospinal fluid constitutes a positive diagnosis.

The temperature is at first subnormal during the period of shock. It is high in medullary edema, in the terminal stages, and usually from 100 to 102 F. during the period of convalescence.

The pulse usually is high, 100 or over per minute, during the period of shock. A slow pulse of 60 or less indicates increased intracranial pressure. As the pulse rate diminishes, it becomes full and is a very misleading sign, especially when associated with Cheyne-Stokes' respiration. The prognosis becomes grave owing to edema of the medulla. On the other hand a rapid pulse may continue, especially if the medulla is injured. Respiration is always rapid during the stage of shock. It should quickly return to normal, and if it does not—like the rapid pulse—it denotes grave medullary damage.

The blood pressure is usually lowered in the first stages only to rise as the intracranial pressure increases.

Paralysis may result either from brain injury or from pressure of hemorrhages. When caused by hemorrhages it tends to clear up in a few days or weeks, but some paralysis may be permanent. Temporary motor aphasia results from a subdural and subcortical hemorrhage overlying the speech area or from a laceration in this area. It usually clears up in a short time. True motor aphasias are rare.

Impaired sensation is usually associated with hemorrhages over the motor area or in the pyramidal tract fibers. Fractures of the base may produce hypesthesia of the lateral half of the face due to injury of the fifth cranial nerve.

Prolonged unconsciousness indicates a high degree of intracranial pressure. Although some cases of high tension are merely stuporous, the victim can be aroused by pressure over certain nerves or by speaking loudly. Some patients are restless and uncontrollable due to a gradual oozing of blood in the fracture area.

Convulsions occur rarely, about once in twenty-five cases during the acute stage, but may come on later when the brain is irritated by scar tissue or increased pressure.

Reflexes of the skin in mild shock are absent, but the deep reflexes are present. In deep shock they are both absent.

In the majority of brain injuries both sides of the brain have been so damaged and impaired by hemorrhage or increased pressure or edema that there is a marked exaggeration of the reflexes on both sides of the body. When the pyramidal tracts have been damaged, the extensor reflex of the toes is present.—Babinski's sign.

In patients where one side of the brain has been damaged more than the other, the Babinski and ankle clomus signs will persist on the side of the body opposite the more damaged cerebral hemisphere, and gradually fade away. Response will show on the side of the body opposite the less damaged cerebral cortex.

Hoffman's sign (pinching the forefinger or small finger of the nail causing a flexion of the terminal phalanx of the thumb) is less often elicited. It is useful in denoting a lesion of the opposite side in the pyramidal area.

On lumbar puncture, an increase in spinal fluid pressure over 12 (normal pressure 5 to 9 mm.) denotes a pathologic change in the cerebrospinal system. Blood stained fluid shows intracranial injury. Its absence does not disprove its existence.

During lumbar puncture, from 10 to 30 cc. of fluid, and in some cases more, should be drained. Lumbar puncture should not be performed during the stage of acute shock.

Choked discs, when present, may indicate cranial injury.

Treatment.—Seventy per cent of the cases recover following lumbar puncture, and the use of injections of 50 per cent glucose and magnesium sulphate. Thirty per cent require operation or die from the condition within a few hours—usually six to twenty-four.

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Short Cuts for Delivery

I [would] controvert the idea that . . . a greater practical experience of the medical student with patients, such as I have suggested in this increased outdoor service, would fit the young graduate to perform obstetric operations. I think it would have the exactly opposite effect. I think that a student who is made responsible, under supervision, of course, for the adequate delivery in an obstetric case becomes more duly impressed with the fact that labor is a physiologic process and that his main duty is to watch it and to see that it is carried out properly rather than to think of short cuts for delivery. It is these short cuts for delivery that have done so much to increase our maternal mortality rates.

I tried to show that, as a basis for a change in our teaching, we would have to take into consideration the increased operative incidence in obstetric deliveries which seem so prevalent in this country. Does that increase in operative deliveries mean that our women are less able by their natural forces to bring to an end this process of labor? I hardly think that that is an explanation. I think that our women are just as competent as the women of other countries to do this. They are no worse off than these women with whom they are compared, so that something else must enter into the picture, and I think that something else is this great desire on the part of improperly and insufficiently trained medical men to devise short cuts in obstetric deliveries which are not really called for.—George W. Kosmack, M.D., in discussing the Symposium on the Undergraduate Teaching of Obstetrics in *The Federation Bulletin* for October, 1936.

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SPECIALTIES AND SPECIALISTS

The thought of osteopathy as a specialty has held sway too long in the minds of the public and in the minds of too many of our own practitioners. "Specialization in the healing art implies a limited application of a physician's skill to one of the several physiological systems of the body. Osteopathy implies a general application of a physician's special skill to all of the various systems of the body. Osteopathy is a general system of healing in the same sense as is allopathy or homeopathy. Each uses the same agencies, so each emphasizes a distinctive approach to the health problem, which is common to all of them."

During the years that the responsibility of osteopathic education has been placed more or less upon my shoulders as chairman of the Bureau of Professional Education and Colleges, I have grown in the belief that we have a certain dignity to uphold and that we must continue to build the thought of osteopathy as a complete therapy.

On this basis the osteopathic physician, having secured his professional education and some experience in practice, may be justified, if he wishes to do so, in beginning to confine his work to a part of the body and thus becoming an osteopathic specialist, for instance, in orthopedics, or in mental and nervous diseases, or in the diseases of women or of children, or of the organs of special sense, or in proctology.

In times past some have got their thinking so badly reversed that they have undertaken to study osteopathy on the basis of a preliminary study of some other system of healing or some specialty.

The dean of one of our colleges has gone so far as to make the statement that comparatively few of those allopathic physicians who have taken up osteopathy have become valuable members of the profession. He says: "There are some, of course, but do they not constitute the exception?"

There have been misguided members of the profession who have undertaken to convince themselves and their clientele that their preliminary training in optometry or in chiropody or even in chiropractic has in some way set them apart and made them better osteopathic physicians. I have in mind a family one member of which contemplated studying osteopathy. She felt that in preparing for her life work it might be an advantage first to study chiropractic so that she might be better prepared to meet the responsibilities of a physician. But after the family had been cared for by an osteopathic physician, who particularly prided himself on his preliminary training in chiropody, the family decided that it was necessary to have that background in order better to prepare the individual for the study and practice of osteopathy. This kind of influence upon prospective students is basically wrong, because it suggests to them that osteopathy is limited, that certain branches of the healing art may be handled better in special schools.

The conviction has been growing in me that in upholding the dignity of the osteopathic profession, we need to remember that we are in no way related to chiropody or to optometry except as those fields touch upon the general practice of medicine, or, if you please, the general practice of osteopathic medicine. I have never felt, nor have I been ready to recommend to our several colleges, that credit should be extended to any individual who had pursued courses in these particular fields or in schools offering courses in them. The only problem of this kind faced by the colleges has been how much credit should be accorded an individual who has attended a class A allopathic or homeopathic college. We have always insisted that no credit be allowed for those who have pursued such courses in inferior medical colleges.

I believe that we as a profession should be just as reluctant to invade the fields of other professions as we are jealous of the rights and prerogatives that are ours by virtue of training and education. The one thought which we should hold out is that we are capable of taking care of the health of well people or of restoring sick people, because of the fact that we have been adequately trained in an approved osteopathic college, that osteopathy is a complete therapy, and that our colleges are training our students to go out into the field as general practitioners. We should remember that any specialization comes by added work, study, and research in the osteopathic field itself rather than by invading other fields to perfect ourselves in any particular specialty.

A certificate indicating that training has been taken in chiropody, or optometry, or any other such specialty in a college or with an individual practicing such art should be considered as casting doubt upon, rather than adding credit to, the training and the ability of its holder.

JOHN E. ROGERS.

THE HUMORAL TRANSMISSION OF NERVE IMPULSES

The brilliant research which won jointly for Prof. Otto Loewi of the University of Graz, Austria, and Sir Henry Dale, Director of the National Institute for Medical Research in Hampstead, London, the Nobel prize in medicine for 1936 is well worth review and careful study because the experiments performed and the conclusions derived therefrom have an important bearing upon the fundamental concepts of osteopathic practice. In osteopathy it is recognized that the functional changes in a tissue or organ obtained clinically, and experimentally on laboratory animals, by the application of osteopathic manipulative therapy, are the result of nerve excitation or its relief in the majority of cases. The mechanism by which nervous tissue transmits its impulses on excitation to the acting tissue or organ is the field of investigation in which the above two scientists distinguished themselves. We can, therefore, to our advantage, scrutinize closely their work and determine, if possible, the application of this new knowledge to osteopathic science. The brief outline* which follows leaves much to be desired when reporting such important research, but space limitations in THE JOURNAL and the increasing demand by busy physicians for information in a nutshell, so to speak, may be reasonable excuses for inadequacy.

In 1921 Loewi[1] proved by a very ingenious experiment that the vagus nerve does not act directly on the heart muscle to inhibit the heart action, but that it produces or increases the quantity of a chemical substance which causes this reaction. He named the substance Vagusstoff and later demonstrated that it is in all probability identical with acetylcholin (a powerful vasodilator), which Dale and his associates obtained from ergot and which had the same effect on heart muscle as Vagusstoff. Loewi's experiment solved in part the puzzling problem of how the excitation of certain nerves may lead to inhibition of an organ rather than stimulation of that organ.

His next step was to determine whether the antagonists of the vagus, i. e., the sympathetic accelerators of the heart, also produce their effects through a similar humoral transmission mechanism. He proved that the alkaloid, atropine (a drug which is known to inhibit parasympathetic function), does not paralyze the vagus, as formerly thought, but prevents by chemical action the effect of the produced Vagusstoff.

It has long been known that eserin, another alkaloid, increases the effect of vagus stimulation. Loewi showed that this substance is able to accomplish this result by making ineffective an esterase present in heart muscle which tends to hydrolyze Vagusstoff. In other words, "the destruction of Vagusstoff, while taking place within a very short time if heart muscle extract alone is present, does not occur after preliminary addition of very little eserin."[2] The significance of this finding is brought out later.

Further investigation was made as to which nerves of the parasympathetic system (craniosacral stream) are capable of showing end results on stimulation after the use of atropine and eserin. These experiments proved that under these conditions the oculomotor nerve was able to cause contraction of the pupil and the chorda tympani branch of the facial nerve was able to cause secretion of the sublingual and submaxillary glands.

On testing other nerve fibers of the parasympathetic system on the assumption that the effect is caused by a humoral mechanism, Loewi ran into some discrepancies. Tremendous doses of atropine given to an experimental animal failed to stop the effects of the vagus stimulation to the intestines or the pelvic nerve fibers of the urinary bladder. The stimulation was almost as effective as without previous atropinization. Dale suggested that in this and other similar instances, "the nerve impulses liberate acetylcholine [Vagusstoff] so close to the reactive structures that atropine cannot intervene . . ."[3] This hypothesis was later proved correct by Dale and Gaddum,[4] also by Kibjakow[5] and Feldberg,[6] thereby supporting the view that all parasympathetic action including vasodilatation of blood vessels is brought about by humoral effects.

Going over to the sympathetic side (thoracolumbar stream of autonomics), Cannon and his colleagues observed that "even after the removal of suprarenal glands and all other organs which in any way could be considered important in this connection, stimulation of the sympathetic fibers innervating the urinary bladder, the intestines or the pilomotors of the tail and other organs increased the frequency of the entirely denervated heart, and produced secretion of a denervated salivary gland in the same animal. Since in these experiments the circulatory system was the only common connection between the various denervated organs and the particular organs, the sympathetic nerves of which were stimulated, and, furthermore, since after cutting off the blood supply the phenomenon did not occur, there can be no objection to the conclusion that stimulation of any sympathetic nerve liberates a substance which effects the changes produced by that stimulation."[7] Cannon named this sympathetic substance Sympathin and later found that it consists of two substances—Sympathin E which stimulates distant motor sympathetic nerve endings, and Sympathin I which stimulates distant inhibitory sympathetic endings.[8]

Now as to whether the neurohumoral mechanism holds good for the voluntary system: It is known that acetylcholin causes a tonic contraction of

*Taken from The Humoral Transmission of Nervous Impulse by Otto Loewi. The Harvey Lectures 1932-33. The Williams and Wilkins Co., Baltimore, 1934.

1. Loewi, Otto: Pfluger's Arch., V. 189, 239, 1921.
2. Loewi, Otto: Pfluger's Arch., V. 214, 678, 1926.
3. Dale, Sir Henry: The Lancet: p. 1179, 1233, 1285; 1929.
4. Dale and Gaddum: Jour. Physiol., V. 70, 109, 1930.
5. Kibjakow: Pfluger's Arch., V. 228, 30, 1931.
6. Feldberg: Pfluger's Arch., V. 232, 75, 1933.
7. Cannon: Amer. Jour. Physiol., V. 96, 392, 377, 1931.
8. Jackson, D. E.; Essential Pharmacology of the Autonomic Nervous System. Jour. Am. Med. Assn., 1936 (Feb. 1) 106:357-360.

striated muscles. An acetylcholin-like substance, that is Vagusstoff, has been demonstrated in striated muscle. Nerve stimulation increases this substance in the muscle. Within the past year Dale[9] and his associates have shown by ingenious experiments that acetylcholin [Vagusstoff] is the medium through which motor nerve impulses activate voluntary muscle.

The significance of these findings concerning the humoral transmission of the nerve impulse may be discussed from two angles—that of the pharmacological and that of the physiological, the former representing the application of drugs in the light of this new knowledge and the latter representing the application of osteopathy.

Since the investigations of Loewi brought out the fact that the action of Vagusstoff or acetylcholine could be prolonged by the use of eserin, drugs similar to this have been tried out on patients suffering with that baffling condition, myasthenia gravis, and some startling results obtained. In 1934 Walker[10] recognized the similarity of myasthenia gravis and curare-like poisoning of the motor myoneural junctions (causing progressive muscular weakness characteristic of this disease). She administered physostigmine, a partial antagonist of curare to a patient with myasthenia gravis and secured encouraging results. This work was followed by her investigation of other drugs whose action resembled that of physostigmine, and in February, 1935, she brought before the Clinical Section of the Royal Society of Medicine two patients who had myasthenia gravis and whose symptoms were completely controlled by the use of Prostigmin.

It is not to be denied, however, that this treatment is symptomatic, as most drug treatment is. Fortunately, Prostigmin appears to offer a means of symptomatic control of myasthenia gravis and may be used over a long period of time without undesirable side reactions.

The success obtained in the treatment of myasthenia gravis has opened up a wide field of investigation and search for combinations of drugs that will aid conditions of neuromuscular dysfunction, especially those under which the autonomic nervous system exercises its control. Such conditions as bronchial asthma, angioneurotic edema, hypertrophic rhinitis, and urticaria come to mind. Recently migraine headache has been treated with apparently considerable success by ergotamine tartrate. Again this is only symptomatic treatment.

Now let us look at the discovery of the humoral transmission of the nerve impulse from the physiological viewpoint and try to determine what relationship this mechanism might have to the osteopathic concept of disease processes and to the ability of osteopathic physicians to stop these processes and re-establish normalcy by properly applied manipulative therapy.

9. Report of Medical Research Council. The Mechanism of Nerve Transmission. Jour. Am. Med. Assn., 1937 (Apr. 24) 108:1443.
10. Walker: The Lancet: p. 432; 1935.

Dr. Still,[11] in his "Osteopathy, Research and Practice," said: The osteopath [ic physician] well knows that he must have two normally pure fluids, blood and nerve fluid. As a mechanical inspector he must . . . hunt for such causes as would interfere with the production of pure arterial blood in quantities sufficient for all demands, or with the supply of *nerve fluid* to every organ." (Italics ours.) It is probably too fantastic to believe that Dr. Still had an inkling of the humoral mechanism of nerve transmission when he spoke of nerve fluid. He probably meant nerve nutrition, but on the other hand, Still outlined an explanation of the processes of immunity and disease which he predicated, in advance of actual study.

Burns[12] has shown that in the osteopathic joint lesion the early changes consist largely of alterations in water balance (local edema) and a disturbed chemistry (lowered pH). Long[13] has shown the mechanism and processes through which abnormal spinal mechanics can produce local and remote effects, wherever and whenever the nerve pathways are traceable. Now we need someone to work on this new angle of research. Many puzzling clinical effects following manipulative treatment might be readily explained if we knew what type of chemical substance was secreted or produced at the end organ. Where a demonstrable nerve pathway is not apparent to explain certain clinical effects in osteopathic treatment, does not this humoral transmission of nerve impulses give us something to theorize upon? The blood and lymph conduct the hormones of glandular tissue from place to place. Is it not possible that these fluids also pick up and transmit the Vagusstoff and Sympathin released at the nerve endings and thus produce effects at far distant points? We have been taught to believe that cervical lesions produce some of their remote effects by way of the vagus nerve. How would one account, other than by humoral effects, for the correction of cervical lesions resulting in the alleviation of troublesome dysmenorrhea when the inhibitory nerve supply to the uterus is supposed to come from the pelvic nerve?

The question of increasing or decreasing the action of an organ, as exemplified in the terms stimulation and inhibition, has always been a puzzling one to osteopathic physicians. We are sadly in need of research to explain these phenomena which occur daily in our practices. A new mode of approach to these problems is opened up in the discovery of the humoral transmission of nerve impulses.

R. E. D.

11. Still, A. T.: Osteopathy, Research and Practice. The Journal Printing Co., Kirksville, Mo., 1910, p. 478.
12. Burns, Louisa: Changes in the Body Fluids Due to Vertebral Lesions. Bulletin No. 7, The A. T. Still Research Institute, 540 N. Michigan Ave., Chicago, 1931.
13. Long, Frederick A.: A Survey of Some of the Mechanisms and Processes Through Which Abnormal Spinal Mechanics Can Produce Local and Remote Effects. Scientific Supplement of the Osteopathic Digest, 1936 (May) 1:13-19.

THE PHYSICIAN AND VENEREAL PROBLEMS

The physician, from time immemorial, has been called upon to care for the victim of venereal disease. Somewhat on the stratum of civilization occupied by the victim will depend the time he presents himself, and to whom. A clinic? The family physician? A specialist? The backbone of the profession, the family practitioner, cannot hope to cope with the physical and sociological problems attending all disease and especially is this true of the social diseases. The clinic fulfills a most important place in the body politic and does a great and good work. But what of preventive education?

The specialist, dealing as he does with a higher class of sufferer sociologically, may have more and better co-operation based on a more intelligent comprehension of the problem. He may be in a particularly favorable position to serve not only as physician, but also as mentor, to the end that each patient may be made more familiar with the actualities of venereal diseases, their cause, their usual and possible effects, and last but not least, that he may absorb those basic principles of prophylaxis so necessary if real progress is to result.

Now comes the controversial point: prophylaxis is presumed by the moralist to be an invitation to licentious living with freedom from penalty.

We hear from all corners of the world that the prevention of disease of all kinds is purely a scientific matter, but, somehow protective measures have failed to make themselves felt in the field of the so-called social diseases. Yet, why should a group of afflictions causing more suffering and unhappiness than is possible to estimate, be so neglected?

A touchy or difficult subject? Yes. Are we as physicians to be deterred in the exercise of our duty because of political, religious, or so-called moral laws—the laws of past generations, born largely of false modesty or prudishness? Are we to risk such antagonisms for the sake of establishing early in the minds of the youth of America a safe and sane understanding? It seems to me to be justified without equivocation. The benefits would soon be so evident as to demand respect for our sincerity of purpose and unselfish devotion to prevention rather than cure. Let those who espouse the field of moral and spiritual guidance, those who think they can legislate morality, show some concrete progress in the reduction of these frightful curses or let us accept the challenge in this field, as we have so successfully in epidemiology in general, and be of concurring opinion as to the procedure and conduct. It is not to be expected that so important and controversial a subject may be settled quickly or even that it ever can be entirely settled—but, let's get started. Let's do something about it, openly and aboveboard, and perhaps the problems will become simplified as we struggle along.

Let us have education as to the ravages of venereal disease—past, present and future. Let us tell the youth of today that a thoughtless moment on his part may not only demand of him years of suffering, but may even be visited upon an innocent next generation.

It is argued that a knowledge of prophylaxis would tend to make for promiscuity. This I think not entirely true, for to many the very need of prophylactic measures would serve as a mental and moral check—would remind them of the ever-present danger and dull the glamour of experience.

We of adult age have seen the substantial growth, and are able to estimate the value, of the social hygiene movement. It is here to stay because it serves a useful purpose. The pioneers were obliged, at first, to hold clandestine meetings; some were cast in jail—but today they are granted a real place in the affairs of the body politic, and are welcomed in our civic societies.

We of tax paying status are supporting clinics to care for the unfortunate victims of venereal disease. How many of us have taken the trouble to investigate them? How many have seen, as I have, a hundred new syphilitics presenting themselves daily at an out-of-the-way clinic in the mountains, seeking—what? Many are so pitifully beyond recovery that one wonders what is the driving force that encourages them to cling to life and painfully make pilgrimage to the spa supposed to hold especial curative powers.

May I, in closing, have the privilege of paraphrasing the legend of the three wise monkeys, and twist it to suit my mood of the moment: Let us speak [of] evil, hear [of] evil and above all see and recognize evil with a steady eye and fixed purpose to devote at least a part of our professional time to the work of education and prevention.

EDWARD B. JONES

THE EXACTIONS OF OSTEOPATHIC TECHNIC

Osteopathy is engineering—biological engineering—and engineering is exacting in its technic. Among the matters that require such exact knowledge and the application of engineering principles might be mentioned a survey of the surface anatomy (particularly the relation of bony contours to the body surface), soft tissue tensions, consideration of the local circulatory disturbances including both the blood and the lymphatic circulation.

In this latter connection, it is interesting to note how often at the level of a vertebral lesion there are evidences of capillary venous stasis to be observed at the surface. As an engineering problem in each lesioned region, not only the surface relationships must be kept definitely in mind, but the contour of the deeper parts as well, so that the bony structures in their entirety, their contacts and tissue attachments may be completely visualized. Observations should be made to detect soft tissue deviations from normal as well as abnormalities of normal bony relationships.

The x-ray may be of aid in a study of any particular or peculiar bony relationship, especially where deeper structures are concerned, although the trained palpating fingers often gather evidences of tissue abnormalities that no other known method of diagnosis can reveal. A determination must be made of the functional capacity of the individual joints and parts of joints, a study being made of the supports for each structure in turn from the foundation upward. This survey should include tension members as well as compression members.

It is necessary to keep in mind in each instance that the portion of a vertebra between the inferior and superior articular facets represents a segment of a wedge. The relative position of these wedges largely determines the functional capacity of the joint structures. When the wedges are driven inward physiologically, they provide for functional stability, or when lesioned in the same direction, they restrict motion. When the wedges are physiologically withdrawn, they provide relaxation and greater freedom of motion in the articulation. Normal movement has a definite range which is modified by any alteration of the relative position of these wedges by a faulting of any of the axes of movement in a joint and by soft tissue tensions. When there is a faulting of an axis of movement, ligamentous tension follows as a matter of course, and the range of motion in the articulation is restricted pathologically. This is followed in turn by edema on account of the difficulty of the lymph in finding easy passage through the tensed tissues, and this in turn is followed by a fibrosis of the ligaments, so that the end result of a faulted axis of movement of an articulation is marked restriction of motion by reason of these secondary factors developing.

A lesioned vertebra is characterized by being off center, even if ever so slightly, and the wedges being thus forced either too far in or too far out from normal consequently allow only restricted or unusual motion. The apex of the wedge of a lesioned vertebra is shifted in relation to the center line of gravity of the body, and, as a consequence, there is change of posture both above and below the point of lesion. In order to properly treat a lesioned bone, all of these engineering factors must be taken into consideration and each wedge and axis adequately visualized. Visualization, too, must include the planes of all the bony surfaces, the angles of the facets, the range of physiological motion, and the restraining members, including the ligaments, muscles, and fascias.

Careful study must be made to determine which one or more of the axes is faulted, the direction of the faulting, the tissues involved in maintaining the faulted axis, the extent of the local secondary circulatory involvement, the edema further restricting motion, and the degree of functional incapacity of the joint that develops as a result of the train of biological events following a primary faulting of any axis of movement.

The motion picture film helps to provide a means of study which is particularly valuable in that the presentation may be repeated frequently without variation until all the points are clarified in the observer's understanding. The educational service of the film is much broader than is a presentation by the lecture and demonstration methods alone, since a film can be sent far and be presented where, for economic reasons, the demonstrator can find neither the time nor the opportunity to make a personal appearance, lecturing and demonstrating the points that can be covered in the film. The most difficult part of preparing a film is the preparation of an adequate scenario and shooting script, so that each engineering concept may be presented step by step in logical order, and the explanation given so that it is easy for the observer to follow through each phase of the mechanics involved and applied. By the film a clear concept can be presented, and one which can be repeated as often as necessary, and at whatever distance it may be necessary in order to convey to others the biological engineering principles involved and their application to any specific problem in osteopathic technic.

GEORGE V. WEBSTER (1880-1935)

BASIC SCIENCE

THE JOURNAL last month called attention to the history of basic science legislation in this country and the fact that basic science bills were introduced this year in fifteen states and Hawaii, but that only four of them passed and that most of them were so mutilated that their sponsors would not know them.

Attention should have been called to the fact that the new basic science law in Colorado does not go into effect until 1940.

Attention should also have been directed to a peculiar feature in the Oklahoma law which stipulates that "the board shall not have any record tending to disclose the identity of the applicants until the results of the examination have been certified to the secretary of state," and yet requires that the $15 fee charged each applicant shall be paid to the board when the application for the examination is filed.

Unfortunately a serious error found its way into the editorial in the June JOURNAL which said: "The [Nebraska] State Medical Society referred to the amendment calling for the preservation of the papers and making them subject to proper inspection, as an osteopathic bill, said that it would nullify the basic science law, and that 'If the bill passes there will be a lot more osteopaths practicing in Nebraska within a short time.' No better proof could ever be needed that it was the intention, by means of an unfair basic science monopoly, to prevent the osteopathic profession from serving the people of the state."

The bill which the editorial writer had in mind was legislative bill No. 270 and the one which the medical society was discussing was 271. Neither of the bills passed.

Special Article

Osteopathic Hospitals—a Challenge to the Profession*

EDGAR O. HOLDEN, D.O.
Philadelphia

One of the most interesting and thought-provoking experiences of my life occurred last summer at the fortieth national convention of the American Osteopathic Association in New York. Assembled in the ballroom of the Waldorf-Astoria Hotel on the occasion of the opening of the Convention was a group of probably the most outstanding men and women connected with osteopathy, men and women of general and special interests, men and women of art and science, men and women of culture and refinement, of all shades of opinion, from all sections of this country and from several foreign nations.

As I contemplated this remarkable gathering, the question came to my mind: "When will the world's most eminent men and women of osteopathy come to comprehend the importance of institutions in their organized picture?" There they were—congregated to promote their interests, with a great public looking on, with the press and the scientific world standing by to catch a word or sign of the dramatic from a comparatively newly fledged school. When would our colleges, hospitals, clinics, sanitaria—not necessarily buildings and equipment, but the work, the services, the purposes fulfilled in them—occupy the place, receive the attention, gain the acclaim they rightly deserve in evaluation of utility, import, and common weal?

The answer resides, I believe, in this distinctive truth that while our institutions, great and small, belong to all of us, their accomplishments are shared by all of us, their work touches the lives of all of us as frequently and more closely than perhaps any other living endeavor today, these facts have not been sufficiently impressed upon us.

Picture what osteopathy would be like if one or more of the major colleges with their hospitals, their facilities, staffs, and students, the graduates who have entered the field of practice, laboratories, dispensaries, training schools, museums, libraries and all the manifold activities connected with such institutions, were suddenly to sail away on a gigantic magic carpet.

What would such a cataclysm lead to? With the vanishing of the alumni of even one of our colleges, many figures in our national life would be lost—directing geniuses, executives, educators, internists, specialists, technicians, clinicians and hundreds upon hundreds of general practitioners; thousands upon thousands of lay men, women and children would be deprived of the benefit of osteopathic treatment and care. Such a loss would be small, belong to all of us, their accomplishments

Now, such an imaginary misfortune can never take place, but the case in point, nonetheless, remains valid. Our institutions are the bulwarks of our strength. Associated with them are to be found some of the best intellectual capacities in our general constituency and in them is represented that very material expression of worth, viz., millions of invested dollars. Take these two essentials away and you have but an apparition—a vestige of a once commanding profession.

We need to be educated as to our potentialities. Osteopathic science must be credited with its full share in accounting for the progress of our profession during the last two or three decades, but it must also be remembered that the colleges and the hospitals as the osteopathic workshops have furnished the equipment and the trained technical personnel which have made the notable advances possible. It must be recognized, too, that the problems and exigencies of the next ten years will not be the same as those experienced in the past. The rate of progression of scientific knowledge, particularly of the healing art, will be such that our best forces—indeed many of them latent at this time—will need to be assembled and put to work.

Say what you will, the rise and development of osteopathy has been sensational. It is to a monumental pioneer courage that we must pay respect for our development, our recognition, our expansion, our security. We have reason, too, to take stock from time to time and to revel in our growth and attainments. Sentiment and pride are just rewards for the victor, especially where the field has been one of almost insurmountable odds. Yet a due sense of humility concerning our relative position and our outlook will not be amiss. We have made wonderful progress. The pace has been fast.

Now I realize that I have been talking abstractly about our organization affairs and that the subject assigned to me is a specific one — "Osteopathic Hospitals." I accepted the courteous invitation of your program chairman with two purposes in mind! First, that of enjoying the privilege of becoming better acquainted with the profession of this important Buckeye State, and secondly, that of attempting to make you "hospital-minded." You must be stimulated to look upon the hospital as an institution worthy of playing a major role in the life of our profession and as an indispensable servant of the public. It must become a patent duty of this society to concern itself with promoting the education of the profession and with enlightening the public regarding osteopathic hospitals. In the parlance of the commercial world you must sell good hospitalization to the people of your communities, who, in the first place, must be given an understanding of what good hospitalization really is and the difference between proper and improper care of the sick in the modern sense.

*Delivered before the annual convention of the Ohio Society of Osteopathic Physicians and Surgeons at Canton on May 17, 1937.

A constant pointing out of the advantage of osteopathic treatment in promoting recovery and shortening the period of disability, is always necessary. The problem of establishing an understanding of the value received from osteopathic hospital care is a matter of education and publicity. Sustained thought must be given to public health questions, to press relationship, to the providing of adequate information for the public. They are an inquisitive lot. Yet some of the ideas which exist in the minds of the public about our hospitals are ridiculous. Therefore, an essential duty of the group assembled here is to consider ways and means of promoting the education of the public.

We will do well right here to survey the field of hospital service in the United States. The sixteenth annual presentation of hospital data by the Council on Medical Education and Hospitals of the A. M. A. reveals the following startling figures: one person in fifteen became a hospital bed patient last year. Now is not that an invitation to consider more seriously the institutional aspects of osteopathic care and to organize hospital units? The admissions to hospitals numbered 8,648,885, accounting for 322,516,856 patient days. The number of beds, not including bassinets, contained in 6,189 nonosteopathic hospitals was 1,096,721. Sixteen persons entered hospitals every minute last year. Of these 6,189 hospitals, the number of general hospitals was 4,207, in which a total of 99,426,828 patient days was recorded. Deaths numbering 413,202 were reported as having occurred in 4,785 hospitals. The average length of stay in general hospitals was 13 days. There were 831,500 births in the United States; 38 per cent of the children born, were born in hospitals. The number of registered hospitals approved for the training of interns and residents was 939. Of the 6,189 hospitals mentioned, 1,724 were governmental hospitals (including federal, state, county and city). Church organizations, fraternal organizations, nonprofit organizations and proprietory organizations control the remaining 4,465. The total unoccupied beds in all hospitals during the year was 188,205. General hospitals were filled only to 65 per cent capacity—35 per cent of their available room was empty. Six hundred new hospitals are being built or planned. The proposed expenditure for these totals $100,000,000.00.

It is hoped that some of these figures will be kept in mind. We shall refer to them and make comparisons with osteopathic institutions.

The latest report on file with the Bureau of Hospitals of the American Osteopathic Association is that for the calendar year 1935 when sixty-one osteopathic hospitals answered questionnaires covering pertinent information with respect to the work performed in them. The total capacity of those reporting approximated 1,600 beds.

Now it is not difficult to see that there are about one hundred nonosteopathic hospitals in this country to every single osteopathic hospital, whether large or small. Classifying our own sixty-one hospitals, we find that:

15 or 24 per cent have capacities under 10 beds (only 3 per cent of nonosteopathic hospitals are that small).
26 or 42 per cent have capacities 10 to 25 beds.
10 or 17 per cent have capacities 26 to 50 beds.
10 or 17 per cent have capacities 50 or larger. (Approximately 45 per cent of nonosteopathic hospitals are large hospitals).

Indeed, since there are 6,189 nonosteopathic hospitals containing 1,096,721 beds, we must believe that the average capacity for these hospitals is 177 beds.

Looking around at some of the hospitals identified with old-school medical colleges we gain an idea of bed capacities from the following institutions in Philadelphia, the so-called medical center:

Hahnemann Hospital.....700 beds
Jefferson Medical College Hospital.....400 beds
Temple University Medical Hospital.....408 beds
University of Pa. (2)
University Hospital 594
Graduate Hospital .....475 1069 beds

The nonosteopathic record for length of stay per patient in general hospitals was thirteen days. The average length of stay per patient in our hospitals was nine and five tenths days. If figures mean anything, particularly comparative figures, then we can point with pride to an accomplishment in this respect, at the same time justifying previous claims in the matter. In our eighteen hospitals reporting, approximately 2,000 births were registered and approximately 14,000 surgical operations were performed. The mortality rate determined for fifteen of the hospitals filing reports was 2.8 per cent, while the autopsy rate was 20 per cent in fifteen hospitals. Very creditable showings, these last two.

Now I started out with the idea of making a case against the progress of osteopathy so far as its hospitals are concerned to date. In doing so, I hold no brief for anyone, but am speaking from facts which should be reasonably obvious from a brief survey of the picture of the progress of osteopathy to date. We have six recognized schools of osteopathy and we are turning out approximately 500 graduates each year. As reliably as we are able to determine, there are sixty-six approved nonosteopathic medical schools in the United States and they graduate about 5,000 physicians annually. The oldest nonosteopathic medical school in the United States, the University of Pennsylvania, was founded in 1765. By 1800, there were five more schools of this type in the United States. Altogether about 460 of these schools have been chartered in this country and in Canada.

The first osteopathic school was established at Kirksville in 1892. Now, 127 years is ample time in any human effort to establish customs, set up traditions and gain a strangle hold so to speak. I do not propose to wax historical about the rapid growth and progress of osteopathy as a profession. It is all too well known. We might better consider the fact that the number of nonosteopathic medical schools declined from 162 in 1910 to 85 in 1920, and there were 76 in 1932. The numbers of students in the 162 schools in 1910 was 25,000, while in the 76 schools in 1932 there were 22,000 students. Intensive campaigns to raise the standards of education in the healing arts in this country

account for the marked reduction in number of schools.

In spite of powerful opposition, including millions of dollars, and paucity of our own numbers, osteopathy has made strides to a proportion where there is one osteopathic physician in practice for about every nineteen so-called old-school physicians. In other words, there are approximately 8,800 osteopathic physicians as compared with 165,000 so-called regular medical men. It is stated authoritatively that the number of persons for each old-school physician in the United States is about 760. At that rate, there would appear to be more than 14,200 persons for each osteopathic physician. Thus a meteoric increase from one to 8,800 or more practitioners in forty-five years suggests a rate of progression for the coming decades that cannot be maintained unless new osteopathic schools are established. It is not difficult to figure that 500 osteopathic graduates as compared with 5,000 non-osteopathic medical graduates each year will not materially affect the existing 1 to 19 proportion for some time, if a similar death or retirement rate is maintained. But that aspect is not our problem at the moment. It has to do with osteopathic hospitals. In forty-five years we have less than 1,800 beds contained in less than seventy hospitals—less than thirty-five of these of a size to warrant the name "teaching hospital" in the eyes of our own inspectors and rating authorities.

Now I do not want to appear to blast away at what has been done. There is room for nothing but commendation for the initiative and the perseverance of the individuals and groups responsible for the running of our present institutions. What *is* important is that we must recognize the need for arousing many other qualified groups to action. We must equip today's and tomorrow's students for standard hospital practice. We submit that it is a fundamental purpose of the osteopathic curriculum to give students a rounded training. That calls for a greatly augmented number of teaching beds in the picture of most of our recognized schools.

The Philadelphia College of Osteopathy and its hospital with a 100-bed unit must have at least an additional 100 to enable it adequately to train its undergraduate students. Kansas City College of Osteopathy and Surgery has erected a small clinical unit adjacent to the college. Dr. A. D. Becker, President of the Des Moines Still College of Osteopathy recognizes the need of facilities out there, and the Kirksville College of Osteopathy and Surgery adds to its clinical teaching capacity but not at a rate to satisfy the needs for more than 800 students. Chicago College of Osteopathy has an expansion program in mind that contemplates added bedside opportunities for students. But apart from the schools we must strive to multiply the number of our osteopathic hospitals. We must educate the public to needs for quarters and facilities for osteopathic procedures and practices. We must mobilize our forces and take our case to the people just as we have in general legislative matters. We must make them conscious of their right to demand osteopathic care in institutions. We must stimulate them to give financial as well as moral backing to osteopathic endeavors.

Let us suppose that the members of the profession in any sizable city in Ohio were feeling the handicap that comes from an absence of hospital beds available for their purposes, that is, directly or indirectly under osteopathic management. Let us assume that they were resolved as a unit to acquire quarters and facilities to serve their needs for the hospitalization of patients. What questions would have to be answered?

(1) Is there a sufficient community (public) appeal?

(2) Will prominent lay citizens be inspired to promote a building program and to form a trusteeship?

(3) Will the profession back it with their dollars and moral support?

(4) Is the professional group equipped to carry on the diverse professional work required within the hospital?

Here I approach the subject of the founding of hospitals from a community and a group standpoint. The first consideration in a hospital is and always will be service to the patient. There was a time when the average citizen looked upon a hospital as a place of last resort in time of illness, injury, or disease. That era is passed. Indeed, the hospital has taken an important place in the social life of our people. It is considered to be an essential element in the program of public welfare. Mr. Average Citizen has been educated through personal experience, through publicity and through the propaganda of the other school to the needs in his community. He will listen, also to the osteopathic case just as well with respect to needs if he is educated to it.

I am not opposed to the enterprising individual osteopathic physician or surgeon who serves his own needs for a workshop by placing a bed or two or three in improved quarters and against odds develops his plant up to eight or ten beds or even twenty or twenty-five beds. It is a question of the man, his talent and capacity, and his ability to organize. Pioneering in the hospital field is attendant with barriers and exigencies. Usually financial stringency on the one hand or greed for profit on the other defeat the essential aims.

It is interesting to know what happens to the average dollar paid by a patient. The following is an analysis of costs (by percentages) in 130 state-aided hospitals from the Department of Welfare, Commonwealth of Pennsylvania: Housekeeping, 6.6; operation of plant, 11.0; repair and upkeep, 5.4; nurses' home, 1.2; nursing, 14.9; medical service, 1.6; laundry, 4.0; pharmacy, 3.4; medical and surgical supplies, 4.4; dietary, 23.5; anesthesia, 2.0; x-ray, 3.6; special therapy, .5; laboratory, 4.0; motor services, .5; social services, .7; outpatients, 1.9; administration, 9.1; commissary, .3; fixed charges, 1.4; total, 100 per cent.

Hospitals should not be run for profit. To effect their highest purposes they require generous additional financial support other than that obtained from patients' fees. Let us consider what these purposes are:

(1) Care of the sick and injured.

(2) Education of physicians, nurses and other personnel.

(3) Prevention of disease and promotion of health.

(4) Advancement of research in the healing arts.

With respect to the all-important question of standards, I do not consider it timely here to go over the ground of detailed requirements. I would prefer to epitomize the subject in the following manner: A good hospital must mean—

(1) A modern physical plant properly furnished and equipped for the comfort and scientific care of patients.

(2) A carefully selected governing board in which is vested complete and supreme authority for the management of the institution.

(3) A competent chief executive officer or superintendent with authority and responsibility to carry out the policies of the institution.

(4) An adequate and efficient personnel, competent in their respective fields.

(5) An organized staff of ethical, competent physicians and surgeons.

(6) Adequate diagnostic and therapeutic facilities.

(7) Accurate and complete clinical records for all patients treated, filed accessibly for future study, reference, and clinical research.

(8) Group conferences of the administrative officers and staff for the purpose of keeping the service and scientific work on the highest plane of efficiency.

Now I want to cite two or three hospitals that are excellent examples of what may be expected if we seriously concern ourselves with the matter of establishing osteopathic hospitals.

Today, in the City of Providence, R. I., or rather in its suburb of Cranston, there is a modern twenty to twenty-five bed osteopathic hospital. It bears the name, "Osteopathic Hospital of Rhode Island, Inc." With an urge that is indispensable to the picture, irrespective of location, the profession in and around Providence was distressed because of limitations of practice. Of course, I am referring to institutional aspects and not to the matter of privileges, as is often the case. A genuinely interested group organized as a unit, numbers were gradually augmented, lay persons were called in, needs were analyzed, interest was crystallized, momentum was gained—all toward one thing—a decision to create and establish a hospital. That was in 1930. The Philadelphia institution had recently completed, successfully, a campaign for funds for new college and hospital buildings. The group in the Quaker City had taken their case to the public, asking for a million dollars, and had already at that time realized in cash almost one-half that amount. The profession of Providence alert to the similarity of their case to that of Philadelphia, with an intelligent approach to the solution of a problem, with an organization whipped into shape, public relations established, enthusiasm running high, with full judicious treatment of the matter, decided to make a public appeal for the quarters and facilities that they believed they were entitled to and of a size they estimated they could manage and run efficiently. The answer to their resolution and a conviction at the time that the profession and the public both would support a soundly-conceived movement, lies quite clearly in that splendid institution that stands up there today. They have a Board of Trustees, eight in number, six of whom are laymen (one lawyer, three manufacturers, one broker, one retired). They have regular staff meetings and clinical conferences and all the conditions and requirements that pertain to sound administration have been anticipated and are being carried out. Now I could go on *ad lib.* about that particular institution. The point is that we have portrayed an example of group constraint, purpose and decision, tying in with public understanding and backing of osteopathic institutional needs.

Let us turn next to Lancaster, Pa. Last Friday night I was privileged to sit as a guest along with Congressman Ira W. Drew of Pennsylvania at a dinner meeting of the Lancaster Osteopathic Hospital Association. We went there at the invitation of the Lay Executive Committee of the Association. Their lay directors, at the instance of the Lancaster County Society, plan the completion of the Lancaster Hospital Project. A public appeal for funds will be made the latter part of this month. It is estimated that at least $50,000 will be required. The movement for the establishment of an osteopathic hospital in Lancaster was initiated nearly ten years ago when public subscriptions amounting to approximately $55,000 were obtained. With the depression, the Board of Directors with conservative wisdom, declined to go into debt to complete the project. Construction of the superstructure and walls had already been completed. Those walls seemingly stood for several years to remind the community of organized osteopathic effort—a beacon, though not one of service, a challenge to achievement to be fulfilled. Now with added resolve, with interest intensified on the part of all, with lines redrawn, with capable leadership, an end is about to be obtained. I am confident that in taking their case to the public, the osteopathic profession of Lancaster will see a working order of things within the next few months. The cases of Rhode Island and Lancaster are not only ones for the record but ones for many a community to emulate.

I believe that I am justified, with pardonable pride, to refer briefly to the case of the Philadelphia Osteopathic Hospital as a fountainhead of organized osteopathic endeavor.

My experience carries me back in that city to the year 1915, when I first saw a three- or four-bed unit styled a "hospital" around the corner from the incommodious college building (a rented house, mayhap with rent unpaid). I can picture Dr. Orin O. Bashline covering up the sins of a small nucleus of inspired practitioners. I remember the meetings that led eventually to a purposeful decision to carry to the public the story of the needs. I recall with satisfaction the first notable attainment in the acquiring of public funds sufficient for the erection of a modern hospital building

in a better part of the city. In 1919, with courage of conviction as a result of the services rendered in those few years, the Board of Directors again appealed for financial assistance and obtained the funds necessary for their expansion program. And so we go on in the Philadelphia case to 1929 when the profession of the East was asked to support a movement for a better osteopathic college and the public was again appealed to for the necessary capital to purchase land and to erect modern buildings compatible with the demands made upon them by the public and in keeping with the advances made by the profession in that city.

On the night that the Board of Directors called in members of the profession of the metropolitan area together with a selected list of lay friends to apprise them of their decision to undertake a new building program, history was in the making. Soon after we announced our intention, one prominent layman electrified the meeting with the announcement that he would give $100,000 to the Fund provided we set and met a worthy goal. All restraint was removed. That generous challenge spurred us into action. Nearly six thousand persons eventually signed on the dotted line in support of the undertaking. The point is that opportunity was afforded to the public and to the profession alike to subscribe to a worthy charity. Now to complete Philadelphia's story, the depression came and many pledges could not be fulfilled. Against the weight of heavy overhead—seemingly insurmountable at one time—the college and hospital were forced to earn their way. Today they are running on balanced budgets. The hospital has been running at capacity for months without relief. There is a waiting list that grows and grows. There is only one answer to it. The Philadelphia Osteopathic Hospital must take the case to the public again before long. It needs a new one-hundred bed wing to take care of the demands upon it. It will be done—by the will of the profession and of the public. It is earning its way in service and thus earns the right to appeal. Did we not cite earlier in this record that 600 new hospitals are being built or planned in the United States at this time at a proposed expenditure of $100,000,000—although general hospitals were filled only to 65 per cent capacity? One hundred million dollars in land, foundations, brick, stone, concrete, etc. One hundred million dollars of whose money? Much of it is Government money (nation, state, community). Mr. John Citizen also will open up his pocketbook as well as fraternity, church, and other associations, industry, etc., in answer to *stated* needs. I repeat *stated* needs and there is at present just one big family organization doing the talking—the American Medical Association.

I call attention to the May issue of the A. O. A. JOURNAL. On page 422A of the supplement printed on green paper stock and containing the Proposed Plans of the Committee on Public and Professional Welfare under Purpose, Method, Objectives, appears a paragraph that I extracted verbatim:

"Opposed to us is the dogma of the so-called 'old school' medical field which is as deep-rooted as superstition and which has always guarded its own self-interest with an exaggerated guise of public benefaction designed to reflect suspicion on anything which deviates. It is the profession's obligation to enlighten the public intelligence and cause it to bring about corrections and changes essential to health and safety."

What good fortune to have that masterpiece—"which has always guarded its own self-interest with an exaggerated guise of public benefaction"—to have that gem coined for me at the very hour of preparing a climax for this humble offering. Could more be said in so few descriptive words to demonstrate a clear case?

Shall we stand dispassionately by and let hundreds of millions of dollars take the form of non-osteopathic hospitals only?

Shall we continue to permit the allopathic organization to get away with their exaggerated guises of public benefaction, or, will we organize to force attention on osteopathy's merits and usefulness? Furthermore, will we arouse the authoritative demand of the public for osteopathic institutional care?

A visible need lies before us. Widespread education concerning osteopathic hospitals is necessary. The establishment and spread of hospitals has not kept pace with the rest of the progress of osteopathic endeavor. Irrespective of the type of training and the scope of training received by us in our recognized schools, we hold ourselves out to be physicians in every sense of the word. It is inconsistent with idea, purpose, and privilege that we have not taken full possession of the possibilities that lie before us with respect to public support that would appear to be ours for the asking if we had plans and projects in mind. Are we going to let the matter rest in status quo? Would not a better state of affairs exist for osteopathy if every possible legitimate and ethical means of informing the public of the benefits it can expect to derive from more osteopathic hospitals were utilized? With an understanding and appreciation of the services of such institutions to humanity, would not the public foster an attitude of genuine good will towards them and support them financially? Good will is dependent upon understanding and understanding is dependent upon knowledge. Lack of knowledge is dispelled by education. If, grouped as we are in various cities and communities, we were disposed to launch hospital units of a size and to a proportion commensurate with the needs in each case, at the same time might we not well expect to accomplish the following ends:

First, to broaden the public understanding and appreciation of osteopathic practice and its tenets,

Second, to foster an attitude of genuine good will on the part of the public toward osteopathic hospitals,

Third, to stimulate a more accurate analysis of community needs in the matter of health so that osteopathic hospitals may assume their rightful place side by side with other hospitals,

Fourth, to promote a desire on the part of the public to understand the character of work performed in osteopathic hospitals,

Fifth, to take our places with other health agencies in the meeting of health and welfare needs of the community,

Sixth, to clarify to the public and to governmental authorities the status of osteopathy so that representation rather than discrimination should prevail,

Seventh, to stimulate voluntary contributions and public and private endowments.

These are but a few of the benefits possible in careful, well-organized plans of public education.

Let us just take a cursory glance at some of the means within easy reach of any of our hospitals already established, assuming that each is worthy and has the co-operation of the local profession. Hospitals are not ordinary business ventures. Therefore, it is necessary that their reputations be unimpeachable and that the practices conducted within them be conducted on the highest possible level.

The very first medium is the satisfied patient. The publicity which satisfied patients disseminate about the hospital is infinitely more important than any other means of education. Next come the medical and nursing staff. Through their contacts they are most important factors in assisting the hospital through their praises of the good work being done. The same goes for the general hospital personnel. They talk about their work enthusiastically and thus effectively participate in educating the public. Boards of directors and superintendents are also important cogs in bringing the story of the hospital to the public. Women's auxiliaries and junior aid societies, through their diversified efforts, are very influential in spreading the news of hospital services. The visiting of patients at stated hours is another important medium—also the radio, newspapers, feature articles, editorials, news pictures, magazines, bulletins, annual reports, exhibits, lantern slides, motion pictures, educational forums, community health meetings, National Hospital Day, etc.

Now, before concluding this paper, there remains for brief analysis that other great function of osteopathic hospitals, aside from the care of the sick or the training of physicians, and the furtherance of public health work. It has to do with the extension of osteopathic research work. By *not* having hospitals, by *not* having workshops, we waive the privilege that is ours to add to scientific knowledge and to validate our claims. Most of our existing institutions can be convicted of merely filing away their records, and while the spirit may be moved to further study and clinical research, action along these lines is not any too apparent. There is a great need here. The prestige of our profession as a science, so sensibly obtained thus far, stands to fall unless we get busy. Every hospital, to a greater or lesser degree, should undertake some research problems. Good research requires much money and the services of highly-trained technicians. Poor research is worse than none at all. False conclusions are dangerous. Few are research minded, and still fewer can pursue the practice of clinical osteopathy so as to earn a livelihood and at the same time doggedly follow the trail of the scientific problem until success crowns their efforts.

Let us for a brief instant consider the appeal that might be created in the mind and heart of a philanthropist in any city in the United States. Suppose there were an osteopathic hospital there. Suppose that a member of his family had been benefited from the osteopathic management of a case, let us say, of diabetes. Through a self-aroused urge to benefit others, similarly afflicted, by making it possible for them to receive osteopathic care, he decides to make a generous gift to the hospital for that purpose. This story is a plausible one, but why go on? It happens just about every day in connection with nonosteopathic medical institutions. Unless we conceive, unless we act, unless we project, we are not opening up the channels that are known to exist for inspiring gifts and endowments which are essential to carry out our purposes on a refined and expanded scale. Just the other day, a man connected with a building and endowment drive of one of our eastern universities told me that he had succeeded in obtaining $60,000 for his institution from a man who had never seen his university or even been in the city of its location. The donor was inspired solely because he did not have the good fortune to be university trained, but wanted to do his bit toward making it possible for some ambitious young person in the future to have the opportunity and the chance, if worthy.

Men and women give millions of dollars to colleges, to hospitals, to societies and orders for every conceivable need as well as to satisfy flights of fancy, whims or sentiment. The most likely recipient of benefactions is the institution already in existence.

Most osteopathic institutions, colleges and hospitals alike, are products of ingenuity and much hard work. Few, if any, are endowed with even the basic resources for carrying on. Those that are already in existence merit support. Others should be in mind if not in course at this time. I foresee a day when there will be at least one osteopathic hospital in every city of this country—provided we sense our duty. That day need not be far away. The issue rests squarely on the shoulders of our group and organization. Public education is the one and only answer—if we have the will and the talent in our ranks.

48th and Spruce Sts.

Committee on Public and Professional Welfare

THOMAS R. THORBURN
Chairman
New York City

Nine states are "over the top" (as this is written) in subscribing or oversubscribing their quotas for the support of the work of the Committee on Public and Professional Welfare. Several others are nearing their goal.

Dr. Thomas R. Thorburn, chairman, announced on behalf of the committee and the zone, state and district chairmen, that the money raising campaign will continue until the amount needed is raised and everyone is given the opportunity to contribute.

Colorado, with a quota of $492, has sent in contributions totaling $607. The District of Columbia set out to obtain $120 and to date the profession in that state reports $367 raised. Minnesota, first over the top, with its quota of $516 now reports pledges totaling $612. Maryland's quota was $90, but the state pledged $115. California, with a $2,934 quota, pledged $2,952.50 and is still going.

Virginia oversubscribed its quota of $108 by $67. Wyoming's allotment was $42, but pledges now amount to $50. Utah and Wyoming chairmen have reported that their exact amounts have been subscribed.

Dr. Alice E. Houghton, state chairman for Utah, wrote to Dr. Harold I. Magoun, zone chairman: "It gives me great pleasure to enclose checks in payment of the Utah quota for the work of the Committee on Public and Professional Welfare."

Because state quotas were prorated according to membership in the A.O.A., California drew the largest, but Zone Chairman Walter V. Goodfellow had splendid backing from state workers and together they have gone far.

California district chairmen assisting Dr. Goodfellow include: Drs. Edgar S. Merrill, M. Elise Carlsen, A. M. Tuttle, Derrell S. Clark, J. C. Goodell, J. C. Rule, Frank E. MacCracken, and Thomas Ashlock.

Members of the Los Angeles clinical group pledged $50 each. When students of the College of Osteopathic Physicians and Surgeons, Los Angeles, heard about the Committee's work, they "passed the hat" and raised $103.

States which have reported three-fourths or more of their quotas raised include: Georgia, Indiana, Tennessee and Vermont.

WHERE TO SEND YOUR PLEDGES

The June issue of THE JOURNAL contains a list of zone, state, and district chairmen to whom pledges may be sent. Pledges mailed direct to Central office will be acknowledged and credited to their proper state quotas.

Since the June JOURNAL went to press, however, several additional state and district chairmen have been appointed. These follow:

Illinois

Fred Shain, 7046 Crandon Avenue, Chicago
R. L. Dinges, Orangeville
R. H. Moore, Aledo
R. W. Briscoe, 200 Eddy Building, Bloomington
Donald Delbridge, Champaign
J. A. Coogan, Lincoln
Wm. J. Trainor, Springfield
Wilma R. Gordon, Augusta
L. E. Wood, Salem

New York

E. R. Larter, 809 Chilton Avenue, Niagara Falls
Theo. Corlis, 238 Pearl Street, Medina
Tefft T. Bassett, 210 E. Fayette Street, Syracuse
Arthur C. Peckham, 204 Trust Co. Building, Watertown
John R. Pike, 90 State Street, Albany
John R. Miller, 183 W. Dominick Street, Rome
R. L. Champion, 431 W. Church Street, Elmira
Edward W. Cleveland, 54 Hawley Street, Binghamton
H. van Arsdale Hillman (Kings Co., Queens, Manhattan, Bronx, Richmond, West Chester, and Long Island)
Harry L. Learner, 601 Lafayette Avenue, Buffalo

Rhode Island

L. Jason Grinnell, 180 Angell Street, Providence
Richard J. Dowling, 16 Bull Street, Newport

Massachusetts

Harry E. Cash, 170 Warren Street, Newton Center

Vermont

T. P. Dunleavy, 162 N. Main Street, Barre
K. P. Wheeler, 310 Barber Building, Brattleboro
C. Fred Wandrey, 304 South Street, Bennington
C. Harry Vaughan, 267 Pearl Street, Burlington
H. I. Slocum, Battell Block, Middlebury
C. O. Gaskell, 128 Merchants Row, Rutland

The following is from a letter sent to members of the Georgia Osteopathic association by Dr. Grover C. Jones, the association's President:

"For the benefit of you people who were unable to attend I want to pass along two suggestions which were made there. Dr. W. M. Pearson in one of his talks, stressed the need of financial support for our Research Laboratory; our Committee on Public and Professional Welfare, and our educational institutions. He stated that if every D.O. in the world would give 10 cents a day to osteopathy, wonderful things could be accomplished. Think of what this would mean—9,000 men and women contributing $900.00 a day, $328,500.00 a year) and not a single one of us would miss it.

"I am so interested in this idea that I intend to get a small bank and drop a dime into it every day and say, 'There is my daily contribution to the profession which has fed and clothed me for 20 years.' At the end of the year that $36.50 will be used to pay my state and national dues and the balance will be sent to national headquarters to be used for the benefit of osteopathy. This may sound like a childish idea to some of you, but is it? The only way I can save is in a systematic manner.

"I would like to propose that EVERY osteopathic physician in Georgia join me in this plan. Let us be the first state association to form a Thin Dime Club for the benefit of our profession. Ten cents a day—the cost of 2 Coca Cola's or half a package of cigarettes! Wouldn't you do that little bit for Osteopathy? If you will join me, and I hope all you Georgians will, drop me a postal card giving me the date on which you intend to begin saving. If we start this club going in Georgia, possibly it may spread through the nation and make osteopathy a vital, living thing in which we can take even greater pride than we do today. In my next letter I shall inform you just WHO has joined the Thin Dime Club."

Several years ago Dr. C. O. Jayne organized a "club" in Illinois operating under what is now known as the "Jayne's Plan." Each member agreed to lay aside 25 cents a week for dues in the state association and for educational work. Later when state dues were raised to $20 a year, the "club" increased the amount to $1 a week. The first $20 of the annual total goes for dues and the remaining $32 for educational work.

A doctor in Kansas writes: "Enclosed find check for annual dues and $3 as quarterly payment for the Committee on Public and Professional Welfare." That is to say, he has pledged $12 a year. He added:

"If Kansas does not come up to the quota assigned to this state, let me know and I will raise my subscription. I want to congratulate the Committee on Public and Professional Welfare for starting this project, and I wish them 100 per cent backing by the profession."

Department of Professional Affairs

A. E. ALLEN
Chairman
Minneapolis

BUREAU OF CENSORSHIP

O. M. WALKER
Chairman
Bloomfield, N. J.

THE A.O.A. CODE OF ETHICS

This month Dr. George W. Riley of New York has discussed that part of our Code of Ethics which covers "The Duties of the Profession to the Public." This concludes the series of articles which has been running in THE JOURNAL during the past fiscal year, elaborating upon the Code of Ethics of the American Osteopathic Association.

O. M. W.

THE DUTIES OF THE PROFESSION TO THE PUBLIC

The licensing of a professional man is based upon the theory that both parties, the licensor and the licensee have complementary rights and privileges, and also complementary duties, obligations and responsibilities, the one to the other. The public, the people, through their organized representatives, in a legally prescribed manner, grant licenses to the members of the healing profession. This license confers upon the physician certain rights and privileges, and in turn it, together with the practice act and other laws, impose upon the physician certain duties and responsibilities.

It is in this connection that that portion of our Code of Ethics, "The Duties of the Profession to the Public," comes up for consideration. Perhaps of the four sections given in this chapter of our Code, Section 2 covers the more practical field of our contact with the public. Owing to the great variety of health laws in the forty-eight states of the Union, it is evident that there is not complete uniformity in our duties and responsibilities to the public. However, the great moral basis of our actions underlying the whole Code is uniform, whether or not there be laws covering these subjects. Therefore, any observations made will apply generally throughout the profession.

It is unquestionably our duty to aid health officials in every way possible in their efforts to protect the health of the public. This means that we are not only to give notification of all our cases of reportable communicable diseases immediately, but also that we are to co-operate with the health officers in arranging for the proper isolation of all such cases for the requisite period of quarantine.

In addition, it is our duty to advise and instruct the other members of the afflicted household regarding the precautions to be taken in order to prevent the spread of the disease, and further to give the nurse or attendant the necessary instructions for disinfection and the disposal of the infective excretions.

It is our duty to be keenly awake to any illnesses that may have been due to spoiled or poisoned food, and to report the same at once to the health officer, that steps may be taken to locate and eliminate the offending material. Along this same line, it likewise is our duty to be alert in the detection and reporting of any person suffering with any of those diseases that may be transmitted by the handling of foods.

A very important duty and responsibility of the physician is that in connection with the recording of vital statistics. In some states this has been a rather recent requirement especially the recording of births. Lack of birth records has been very annoying when a person wished to establish the date of his birth. This is a necessary requisite for obtaining a passport when undertaking a trip to another country.

Another field wherein we should co-operate has recently become prominent. The fight against social disease has come out in the open. Regardless of whether the individual physician has been active in the care of diseases of this type, it is our duty to aid health officers all we can when such cases come to our professional attention. We should aid also in the dissemination of reliable information on this subject for the purpose of arousing and building up an intelligent community consciousness concerning these diseases and the dangers they hold to the health and happiness of all individuals. These dread diseases can be eradicated only by organized intelligent co-operation between physicians and the public.

Finally, it seems possible to render a particularly valuable aid to the public by our active and conscientious co-operation with the public health nursing service. This is a rather new field of public activity, and while in its new and formative stage there are possible pitfalls of misunderstandings. Nevertheless the goal of helpful service to the needy poor should prove a spur to unselfish compromises that will make the co-operative endeavor a very great success.

G. W. RILEY.

Hotel Roosevelt.

Department of Public Affairs

P. W. GIBSON
Chairman
Winfield, Kans.

BUREAU OF INDUSTRIAL AND INSTITUTIONAL SERVICE

WILLIAM O. KINGSBURY
Chairman
New York City

GOOD WORK BRINGS RECOGNITION

Specific instances indicate successful fruition of the plans of this Bureau, as shown in some recent correspondence:

Dr. N. A. Zuspan of the Nebraska Osteopathic Association reports that the committee of which he was chairman has assisted local osteopathic physicians in settling claims for service.

A letter from an industrial company in Michigan to an osteopathic physician contains the following: "For the past two years you have been serving this corporation in the handling of employees injury cases. We feel that you will be interested to know that during the past six months we have not had a single accident which has necessitated lost time by any employee, except one case —a fractured rib. Inasmuch as our employment figures

for the past two years have ranged from 35 to 50, we feel that you are deserving of commendation from us for this very fine record, which in so far as the writer knows is about the best in the history of the company and is, in a large measure, due to your efficient handling of our accident cases."

The Volunteer State Life Insurance Company of Chattanooga, Tenn., in a letter to Dr. W. O. Kingsbury, chairman of the Bureau, announced its intention to appoint a certain osteopathic physician as examiner for the company.

Letters of this type indicate the high esteem in which individual members of our profession are held by the public. If this work is to progress, it is necessary that more osteopathic physicians become interested and diligently follow up all opportunities presented. With a little alertness, instances such as those cited here need not remain isolated. Let us all co-operate in preparing this wide and promising field of industrial and institutional service for osteopathy.

WALTER E. BAILEY,
Secretary.

LEGAL AND LEGISLATIVE

A. G. CHAPPELL
Jacksonville, Fla.
Legislative Adviser in State Affairs

RENEW FEDERAL NARCOTIC PERMITS

Osteopathic physicians who hold federal narcotic permits are reminded that the permits must be renewed every year before July 1. Failure to do so entails severe penalties.

RE-REGISTRATION OF OSTEOPATHIC LICENSES

July 1—Idaho, $2.00. Address Dr. Andrew McCauley, Secretary, Smith Bldg., Idaho Falls.

—Michigan, $1.00. Address Dr. F. Hoyt Taylor, Secretary-Treasurer, 1702-03 Olds Tower, Lansing.

—Kansas, $5.00. Address Dr. Raymond L. DeLong, Secretary, 721 First National Bank Bldg., Wichita.

September 1—Nebraska, $1.00. Address Dr. Charles A. Blanchard, Secretary, 846 Stuart Bldg., Lincoln.

MEASURES AFFECTING PHYSICIANS

Alabama

The bill to regulate the practice of medical technicians, outlined in the April JOURNAL, has been enacted.

Colorado

A. W. Patton, D.O., was sued for damages for alleged negligence in a case of torticollis and a mid-cervical lesion. The case was first tried in February, 1935. At the close of plaintiff's case defendant moved for a non-suit. The motion was denied but before the defendant had finished introducing evidence the court reversed itself and sustained the motion. The supreme court sent the case back for trial and the jury, after only a few minutes, brought in a verdict for the defendant.

Connecticut

The attorney general of Connecticut recently barred osteopathic physicians from issuing health certificates required for marriage licenses because the taking of a blood sample required puncturing the body. To remedy the situation there has been introduced H. B. 1625, providing that "the term 'licensed physician' as used in subsection (B) of section 1595c of the 1935 Supplement to the General Statutes, shall be construed to include a licensed osteopathic physician." The Committee on Public Health and Safety recommended that the bill pass.

Florida

The attorney general on June 2 advised the State Board of Osteopathic Medical Examiners that no one who is not a citizen of the United States is eligible to take the examination.

It is reported that the basic science bill in Florida was killed.

Hawaii

The recent legislative session is reported to have been the most active in many years.

H. 253 and S. 162 were basic science bills tabled in a joint meeting of the Health Committees of the two houses.

H. 255 and S. 166 provided for a teacher of health education in the public schools. It was enacted.

H. 251 provided for a reorganization of the Board of Health and for the appointment of a Commissioner of Public Health. It included the stipulation that members should be "medical doctors." Enacted.

S. 180—to open all hospitals, tax-exempt or receiving public support, to osteopathic physicians on the same basis as M.D.s and to permit no discrimination. Said to have been the most bitterly contested bill of the session. It was impossible to get the bill out of the Senate Health Committee.

There were several social security measures to which the osteopathic profession raised no objection and which were enacted.

Illinois

A law has been enacted to require of all applicants for a marriage license evidence of freedom from syphilis or gonorrhea. Physicians' affidavits and laboratory reports are required. The laboratory test may be taken without cost at city or state health department laboratories. It is said that the only other states making such requirement impartially of men and women are Oregon, Montana and Connecticut.

Iowa

In that portion of the social security bills relating to aid for the blind there was a definition of ophthalmologist as "a physician licensed to practice medicine in this state . . ." The osteopathic workers secured the elimination of the entire definition. In the same bill there was also a designation of the procedure to be followed in securing a competent "medical" examination to determine blindness. The word "medical" was eliminated.

The successful amendment to the Workmen's Compensation Act was mentioned in the June JOURNAL.

Bills killed included one relating to the practice of chiropractic and one that would have cost members of the profession thousands of dollars to prevent physiotherapy apparatus from interfering with radios.

Among the bills under which osteopathy was protected, but which were not enacted was one relating to health examination of employees in food establishments, one relating to the qualifications for coroners, and one requiring certificates of health of applicants for marriage licenses.

Among the bills under which osteopathy was protected and which were enacted was the narcotic bill and the podiatrist bill.

The Board of Supervisors of Polk County, including Des Moines, was empowered to contract for medical, dental and osteopathic care. It should be of benefit, and should end discrimination by entering patients into state institutions without the necessity of sending them through the doctors at an allopathic hospital.

Massachusetts

The bill to open hospitals to osteopathic physicians was killed.

Michigan

Dr. Heinrich H. Kesten, Flint, Michigan, has filed a circuit court action asking an injunction to compel the board of managers of the Hurley Hospital to give him as an osteopathic physician access to the hospital, that he be allowed to practice therein, and that patients under his care be admitted to the hospital and all of its services on the same basis as those referred by M.D.s. Dr. Kesten holds that the board's ruling preventing the practice of osteopathic physicians within the hospital is "unreasonable and without the authority of the city of Flint."

The annual reregistration law has been amended to change the fee from $10 to $1.00.

A basic science bill, as outlined in the June JOURNAL, was enacted. It does not apply to anyone matriculated before October, 15, 1937.

Missouri

A law was enacted providing for the annual reregistration of osteopathic physicians on November 1, with a renewal fee of $2.00 each year, "provided, that satisfac-

tory evidence is presented to the board that the said licensee in the year preceding the application for renewal attended at least one of the two-day educational programs as conducted by the Missouri Association of Osteopathic Physicians and Surgeons, or its equivalent as approved by the Missouri Association of Osteopathic Physicians and Surgeons."

Nebraska

A bill was introduced to give osteopathic representation on the basic science board. The committee reported it adversely, but the legislature placed it on general file and never voted upon it because of adjournment before it was reached.

A bill was introduced to amend the basic science law to require that the papers be preserved for a reasonable length of time and be subject to examination by properly qualified individuals. (Not passed.)

Oregon

In Chapter 111, Oregon Laws 1937, the 1935 law is amended to read: "Sec. 68-2412. Any person practicing any of the healing arts who uses the title 'Doctor' or any contraction thereof, 'Clinic,' 'Institute,' 'Specialist,' or any other assumed or artificial name or title in connection with his business or profession, on any written or printed material, or in connection with any advertising, shall add after his name one (1) of the following respective designations: . . .

"(f) In the case of a person practicing osteopathy, the word 'Osteopath,' or 'Osteopathic Physician and Surgeon.' . . ."

COMMITTEE ON VOCATIONAL GUIDANCE

MARY L. HEIST
Chairman
Kitchener, Ont.

CONTACT THE RETURNING STUDENT

Many students are now home for the summer vacation. Those just graduated from our colleges will be glad to take over the practices of physicians wishing a holiday. They will welcome invitations to visit our offices. They will gain from our experience, and they may bring to us new methods of diagnosis and treatment. If they are opening up their own offices, they will be glad of our interest and advice.

Undergraduates may want work, and we may be able to help them in securing it. Possibly we can arrange for them to speak before small groups of boys and girls at vacation camps. No group is too young not to be interested in health measures and osteopathy. We are of the opinion that those who have grown up under osteopathic care develop into the best osteopathic physicians. Youth is enthusiastic and the best thing we can do for osteopathy is to place our young students among young people to interest the latter in making it their vocation.

We should keep in touch with students during the college year. They will appreciate knowing that we have their welfare at heart and that we will assist them in any way we can. It is a great advantage to be able to direct new students to someone in college from their own vicinity.

Summer is a fine time to promote student recruiting. Both the graduate and the undergraduate will make strong appeals and with their help we should be able to materially increase the college enrollment. With returning prosperity people are more able to finance education for their children. We may well bestir ourselves and direct a goodly number of them into our own profession.

M. L. H.

The application of science to the study of man must be inspiring, not disheartening; strengthening, not weakening; must aim to prove to each individual that he possesses a unique combination of abilities, one which the world has perhaps never seen before . . .—Johnson O'Connor, *Atlantic Monthly*, June, 1931.

COMMITTEE ON SPECIAL MEMBERSHIP EFFORT

F. A. GORDON
Chairman
Marshalltown, Iowa

MEMBERSHIP STATUS

The membership record of 4,616 reached at the close of the fiscal year 1935-36, must now give way to an all-time new record of 5,112 for 1936-37. Delegates to the New York convention constituted a committee which helped bring about this growth, and they merit your expressions of appreciation for their patient and persistent efforts. While the net gain in members was 496 as compared with 566 of the previous year, yet it must be recalled that 224 dropped from the rolls on December 1, 1936, had to be replaced. Available prospects are less numerous than even a year ago. In addition to this net gain, a potential increase of 198 becomes actual upon licensure of that number of recent graduates.

DES MOINES COLLEGE VOTES 100 PER CENT A.O.A. MEMBERSHIP

Following the suggestion of Dr. A. D. Becker, President, the student body of the Des Moines Still College of Osteopathy voted to belong 100 per cent to this Association beginning next year. This means every student will be a subscriber to THE JOURNAL OF THE AMERICAN OSTEOPATHIC ASSOCIATION. This status of 100 per cent student subscription to THE JOURNAL obtains also at the Kansas City College of Osteopathy and Surgery, and at the Philadelphia College of Osteopathy. There are indications that our colleges in Kirksville, Chicago, and Los Angeles may soon vote similar endorsement for the work of this Association and its official publications.

HONOR ROLL

The fiscal year closed June 1 with New Hampshire well out in front of the other three leaders of their respective groups for high percentage membership of the profession.

Group D—New Hampshire, 86.95 per cent A.O.A. members.
Group A—New Jersey, 81.07 per cent A.O.A. members.
Group C—West Virginia, 77.02 per cent A.O.A. members.
Group B—Wisconsin, 70.40 per cent A.O.A. members.

Since the report in the June JOURNAL was prepared, memberships have been secured by Drs. C. C. Hitchcock, Wis.; Eva Magoon, N. H.; George C. Eoff, W. Va.; P. O. French, Ia.; Gertrud Helmecke, Ohio; Louis H. Logan, Tex.; E. A. Marcoux, Mass.; E. S. Merrill, Calif.; S. M. Pugh, Wash.; I. J. Shallett, Me.; F. E. MacCracken, Calif.; Robert B. Thomas, W. Va.; D. D. Waitley, Ill.; W. E. Hartsock, Mo.; O. G. Weed, Mo., and F. A. Gordon, Iowa.

The following have secured five memberships or multiples of five each as indicated by the symbols, since Nov. 1, 1936:

A=5 A.O.A. memberships; D=5 Divisional Society memberships.

Alexander, J. R.—Tex. (D)
Billington, T. G.—Okla. (D)
Brown, W. H.—Ill. (A)
Bugbee, W. C.—N. J. (A) (D)
Chastney, J. E.—N. J. (A) (D)
Conley, Geo. J.—Mo. (AAA)
Darrow, G. E.—Mo. (D)
French, P. O.—Ia. (D) (A)
Gandy, P. B.—W. Va. (AA) (5D)
Glass, O. R.—Ohio (DDD)
Gordon, F. A.—Ia. (14A) (D)
Hannan, D. E.—Ia. (D)
Hartsock, W. E.—Mo. (AA)
Jones, Margaret—Mo. (AA)
MacCracken, F. E.—Calif. (A)
Magoon, H. I.—Colo (A)
Pugh, S. M.—Wash. (D)
Rosencrans, W. G.—S. D. (DD)
Schwartz, J. P.—Ia. (D)
Smith, Hunter—Fla. (A) (D)
Strowd, J. P.—Mont (DD)
Shellenberger, N. W.—Ill. (DD)
Weed, O. G.—Mo. (AA)

MEMBERSHIP GAIN SINCE AUGUST 1, 1936

On June 1, thirty-one divisional units registered net gains in A.O.A. membership sufficient to offset slight losses existing in fourteen other units, and to advance the net membership figure 5.3 per cent above the mark of August 1. The remaining thirteen units maintained a par membership.

Greatest gains during May were recorded by Texas, Pennsylvania, and Illinois in Group A; by Florida in Group B; by West Virginia in Group C; and by Wyoming and Idaho in Group D.

GROUP A
(Societies of more than 200)

	Per cent of gain on June 1, 1937
Texas	14.26
Illinois	12.62
California	11.89
Michigan	9.37
New Jersey	8.43
Iowa	7.73
Massachusetts	5.67
Missouri	4.52
Pennsylvania	3.59
New York	3.04

GROUP B
(Societies of 100-199)

	Per cent of gain on June 1, 1937
Maine	12.12
Florida	11.62
Minnesota	9.75
Colorado	7.50
Washington	1.49

GROUP C
(Societies of 50-99)

	Per cent of gain on June 1, 1937
West Virginia	58.33
Oregon	13.88
Montana	12.82
Ontario	2.04

GROUP D
(Societies of less than 50)

	Per cent of gain on June 1, 1937
Wyoming	50.00
Utah	50.00
New Mexico	40.00
Nevada	33.33
Delaware	28.57
Mississippi	20.00
Idaho	17.64
New Hampshire	11.11
Arizona	9.09
District of Columbia	5.26
Louisiana	5.00
Vermont	4.34

Par membership obtains in Oklahoma, Nebraska, Connecticut, Alabama, Arkansas, Maryland, South Carolina, Virginia, England, Saskatchewan, British Columbia, New Brunswick and Manitoba.

F. A. G.

Association for Osteopathic Child Study

The Association for Osteopathic Child Study has announced through Dr. Jennie Alice Ryel, Hackensack, N. J., chairman of its Child Study Research Committee, that it is now in a position to go ahead with a second projected series* of osteopathic clinical studies of child health problems, the goal being a compilation of 1,000 child cases in which the osteopathic principle has been applied.

The organization's specifications for compiling case histories are as follows:

1. The case, to be acceptable, must present evidence bearing upon the question of the significance of the osteopathic lesion. It will not be necessary to trace the lesion to its source, as was required for the accident series, but if the source of the lesion is known, it should be reported.

2. Eighteen years is the upper age limit of cases for child study purposes.

3. Reports must be complete, in good form, and typewritten.

A total of 232 osteopathic physicians have expressed their interest in this child study project. Of these 93 physicians and institutions contributed clinical material, of whom 14 also paid the supporting membership dues of $1 for at least one year; 55 physicians did not contribute clinical material but paid the supporting membership dues; 84 physicians expressed interest in writing but have neither contributed clinical material nor paid dues.

The committee states that the active support of 232 physicians will insure the success of the new series.

*Reports on the first series were published in THE JOURNAL for October, 1936, and in the March Bulletin of the Association for Osteopathic Child Study (reviewed in April, 1937, JOURNAL).

American College of Osteopathic Surgeons

J. P. SCHWARTZ
President
Des Moines, Iowa

STANDARDS RECOMMENDED FOR SURGEONS

The following are the standards recommended by the American College of Osteopathic Surgeons, under which physicians may be admitted for the practice of major surgery in osteopathic hospitals:

1. The applicant for the privilege of performing major surgical operations in this hospital shall be a member of his national, state and local professional organizations.

2. He shall present satisfactory evidence that he has served an interneship of one year's duration in an approved hospital; or the equivalent of this requirement for those graduating up to and including the year 1930.

3. He shall present certified evidence of one year's assistantship to a qualified surgeon, or the performing of not less than 200 major operations of a general nature under the direct personal supervision of a qualified surgeon.

4. He shall have been in general practice for a period of at least five years.

5. His competency in the performing of major surgical operations shall have been considered satisfactory by the attending hospital staff.

THE DUODENAL OR LEVINE TUBE AND ITS USES

J. H. WALLACE, D.O.
Wichita, Kan.

The duodenal tube is of important practical value to all physicians, especially those who do not have ready access to hospitals. The equipment required is inexpensive; it is not bulky and therefore easy to transport; it does not require strict sterile technic in its administration. The solutions needed can be applied quickly in practically any case in which the physician feels that it is important to maintain a normal water balance, supply glucose, maintain normal chloride reserve, control vomiting, and induce as much rest as possible.

In a brief history concerning the development of suitable tubes for this purpose, Einhorn[1] has this to say:

"The stomach tube was developed about 1885 . . . The first attempt to reach the pancreatic secretion was abandoned until Boas, about 1889, published a paper in which he said that he had succeeded, by the introduction of a stomach tube into the fasting stomach and massaging the liver, in obtaining a fluid from the stomach which was regurgitated there from the duodenum. It gave the reaction of the pancreatic secretion.

"In 1897 Hemmeter described a method by which he thought he could introduce instruments into the duodenum . . . Hemmeter's instrument consists of a rubber bag that resembles the stomach and this bag contains in its upper segment a groove or a canal for another tube which is inserted into the duodenum through the pylorus as soon as the bag has been introduced and has been filled with air."

These experiments were conducted primarily with the intent to analyze both physiological and pathological intestinal secretions. These methods include the use of beads, dyes, duodenal buckets on string, and tubes. The original duodenal bucket was a small silver bucket, which could be swallowed, on a string which was marked at the estimated length of the tract to enable the bucket to enter the duodenum, in this manner the contents of the duodenum were withdrawn and mysteriously studied. Later came the duodenal catheter which had attached to its distal end a small perforated ball which was to be swallowed to facilitate the introduction of the tube. Most

of these experiments were conducted before the introduction of x-ray, and as a result of which many violent discussions took place over the question of whether the tubes were actually in the duodenum or the stomach, and as to the true nature of the secretions obtained.

Einhorn further states in his description of measures to facilitate the passage of the tube: "Taking of food, lying on the right side, moving about, effervescent drinks, aperients and atropin may be employed for hastening the passage of the tube into the duodenum." He describes also a method of feeding a patient by means of the tube. Duodenal alimentation is a mode of artificial feeding by which adequate nutrition can be maintained indefinitely.

In a study of the nitrogen metabolism during duodenal alimentation undertaken by Einhorn and an associate, they have demonstrated that there is no actual nitrogen loss in the organism. This type of feeding on the contrary enables the patient to add to his nitrogen reserve.

The indications for duodenal alimentation are: First, ulceration of either the stomach or duodenum; second, dilatation of the stomach which occurs in a great many cases without organic obstruction and extreme atony whether there is a pyloric spasm present or not; third, when nutrition is difficult, as in nervous vomiting, vomiting in pregnancy, postoperative vomiting and physiological vomiting where the organism is trying to empty the intestinal tract; fourth, peritonitis. One might think, at first, that it would be impossible to apply the tube in all these cases, because the tube would be vomited, but this very seldom happens.

Mason[3] says: "In the first place, a not inconsiderable amount of blood has been lost during the operation, usually more than is appreciated. In order to maintain blood volume, water is withdrawn from the tissues, perhaps already containing a decreased amount of fluid." [Pre-operative starvation and dehydration!??] "During a general anesthetic and during the recovery period, large amounts of fluids are lost by sweating. Toxic materials liberated at the site of operation require large amounts of fluid for elimination, as do the products of tissue disintegration at the site of operation during the recovery period. Due to the restriction of food, acidosis may be present or imminent. The almost certain elevation of temperature in the twenty-four to thirty-six-hour postoperative period will bring about further increase in the 'insensible loss' of fluid by which is meant water loss by sweating combined with the loss by way of the lungs as water vapor. A varying amount is lost by vomiting. The demand of the body for more fluid to make good the abnormal losses is made known to the patient subjectively by thirst, which increases his postoperative discomfort to no little extent. It is obvious that in immediate postoperative period, even the ordinary fluid requirements in health are inadequate. Allowing for 2000 cc. for insensible loss (higher than normal because of increased sweating), coupled with a desired output of 1500 cc. of urine to eliminate accumulated solids, 3500 cc. of fluid during this period may be taken as the minimum fluid requirement. If vomiting has been excessive, or if there has been an increased loss by biliary or intestinal fistulae, the requirement is, of course, much higher."

Mason also says, under the topic of "Postoperative Vomiting," that the solution for gastric lavage which contains sodium bicarbonate, one drachm added to the pint of hot water, is probably *unnecessary*. "It is definitely contraindicated if there is a suspicion of alkalosis. The lavage is repeated every four hours if vomiting persists, or better still, a duodenal tube is introduced through the nares, left in place, and constant suction applied." (Italics mine.) At the Southwestern Osteopathic Hospital we never use constant suction with the Levine tube; it is my belief that constant suction is more irritating and not physiologic. Continuing with Dr. Mason's discussion, "Intravenous dextrose [or glucose] whether or not acidosis is the cause of the vomiting, often acts like a charm. Since considerable chloride has been lost in the vomitus, the dextrose is perhaps best given as a 5 to 10 per cent solution in physiologic saline. If the vomiting does not respond to these measures, it is apt to prove troublesome."

In our work here at the hospital previously mentioned, during the past three years we have used the Levine instead of the stomach tube in several different types of cases, but chiefly in the postoperative cases as routine for postoperative vomiting.

In the postoperative work, which I started to take care of in April, 1934, we occasionally have a case of postoperative vomiting which is quite persistent. It is practically impossible to anticipate this type of trouble before surgery, except in cases where patients give a history of gallbladder disturbance or colitis of any type. These gallbladder and colon cases, if not extensively prepared before surgery, occasionally develop postoperative vomiting which is quite severe. The patient is in constant distress from epigastric distension which is not relieved by enemas alone and seldom by enemas and the use of pitressin combined. The patient also suffers from constant nausea and repeated efforts at emesis. It is important to determine, within a short time, whether the patient can be relieved by means other than the Levine tube. Of course, postoperatively, the patient is more or less apprehensive and becomes alarmed when he discovers that he is having "gas pains." The nausea disturbs his equanimity and the loss of important body fluids, by reverse peristalisis and resulting emesis, increases his dehydration.

When the gas is low in the alimentary tract, we have found that the use of "Harrison Seepage," which is a solution of water, Karo syrup, and lactric acid, rectally injected and syphoned off repeatedly, is much more effective than the ordinary "gas enemata."

We have also used to advantage, preoperatively, lactic acid enemata, which consist of one drachm of U. S. P. lactic acid to two quarts of tap water, as suggested by W. Curtis Brigham, D.O. This enema does not produce as much intestinal gas and irritation as commonly used enemas. Dr. Brigham's idea tallied exactly with the idea of the "Harrison Seepage," inasmuch as the lactic acid, when used as a cleansing agent in the intestinal tract, tended to reduce gas and to greatly facilitate the eradication of mucus. I, therefore, decided to try a mixture of one drachm of lactic acid to two quarts of tap water for irrigation of the stomach and duodenum with the Levine tube in position.

The following equipment is needed for this purpose:

flashlight.
1 Levine tube, 16 French preferred.
1 glass connection.
1 piece of rubber tube to reach pan.
1 pan of ice water to chill the clean tube.
K. Y. or other lubricating jelly.
1 emesis basin.
1 towel.
2 pieces of tape ⅛ to ¼ in. wide, 6 in. long.
1 bulb syringe.
lactic acid, U. S. P.
2 quart pitcher for irrigation solution.
Pan or bucket for waste.

In selecting the tubes, I have tried several kinds and types, and I have found that the straight Levine tube of either a 14, 16, or 18 French is best suited for all types of adult patients. The 16 French is the best average size; it is not large enough to produce pressure irritation in the throat and nose, and has strong enough side walls to prevent pressure collapse. The 16 French tube usually will undergo five therapy installations within a period

of three to five months, and will then have to be replaced because it becomes flaccid.

I usually use a flashlight of some sort to examine both nasal orifices and choose the one that has the least congestion and the most air space. The light can also be held by the nurse during the introduction of the tube to visualize the passage of the tube through the posterior pharynx. It is best always to explain to the patient the entire process and expected results of the administration of the tube.

The tube is first lubricated well and introduced gently into the selected naris. The patient is told that when he feels the tip of the tube in his throat he is to swallow it. When the operator's fingers feel there is no more resistance to the passage of the tube, it is passed continuously into the nose with gentle quick pressure. The patient has been told to pant like a dog during this process. When the end of the tube enters the stomach, the stomach contents may be regurgitated into the pan at the free end of the tube, or it may be that only gas will be heard to escape. When the tube reaches the stomach, it is best to stop a moment and explain to the patient, while holding the tube firmly in place, near the nostril, that he can now relax and breathe normally. If emesis occurs during the introduction of the tube, the patient's head is turned far to one side and he is told to allow the fluid to run out of his mouth.

The tube is then anchored firmly to the side of the upper lip with tape, and a syringe full of the lactic acid solution immediately introduced into the stomach. If nausea or emesis occurs the solution should not be withdrawn, but the syringe disconnected and about two syringes of air forced into the stomach. The patient will then belch freely and will probably get some relief. It is necessary occasionally to force one or two syringes full of air through the tube in order to dislodge any particle of mucus or food that may be clogging it.

If, at any time, it is possible to introduce solution into the stomach through the tube, but not possible to recover it, one of four things has occurred:

(1) There is a mucus plug in the tube, acting as a ball valve, in which case the proper thing to do is to remove the plug, usually merely by forcing air through the tube.

(2) The end of the tube has curled up in the pyloric end of the stomach with the end pointing up above the level of the irrigation fluid and the contents of the stomach. The remedy for this condition is to remove the anchor tape entirely from the tube at the nostril, have the patient pant, and gently withdraw the tube or reinsert the tube deeper until the tube drains freely. This difficulty is seldom encountered after the tube has been in proper position for a few hours.

(3) A kink or twist in the tube. The remedy is merely to remove the tube and reinsert it.

(4) Collapse by pressure on the walls of the tube. This occurs only when a tube has deteriorated from prolonged use in lactic acid solution and gastric contents. This condition, of course, can be remedied only by replacing the old tube with a new tube of good rubber.

In most cases the Levine tube is kept in position for twenty-four to seventy-two hours, depending, of course, upon the amount of dehydration and length of time it takes to normalize the patient's intestinal tract for routine feedings. It is well for the nurse to have at hand a glass of ice cold water which is to be the patient's reward for his co-operation in this trying ordeal. The patient is allowed a few sips of ice water at first to aid in quenching his thirst. He later may have fruit juices, jello, tea, coffee, bouillon, and water with plenty of glucose. These may be given when indicated at any temperature, after four hours. Excessively cold drinks are to be allowed only in small amounts up to a pint in the first four hours, then allowed freely as long as the tube is open and drains freely.

On the last few cases of postoperative vomiting we have used one drachm of U. S. P. lactic acid in two quarts of normal saline solution for the irrigation. In using this solution we irrigate every hour and leave the tube open for free drainage and the passage of gas. The normal saline solution greatly aids the already dehydrated patient to bring about a normal water balance much more quickly than the use of lactic acid and ordinary tap water.

Treatment with the Levine tube is not proposed to take the place of necessary surgery, nor for palliation in any case that needs surgery if the surgery is available. This treatment should not be used unless a fairly accurate conception of the diagnostic and treatment problem has been worked out by the physician. The tube may be used to give comfort while consultation is called, or until the patient can be moved to the place of consultation, and surgery performed if indicated. I say this as a warning against the use of the tube in undetermined acute abdominal conditions, especially obstruction and internal injuries. Most of my experience with the tube has been with postoperative patients. I have handled a few nonsurgical cases and believe that the treatment here outlined may be used with the above precautions, of course.

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Diagnosis and Treatment

STINGS AND BITES OF INSECTS, SNAKES AND OTHER SMALL ANIMALS

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This subject is a complex one. Many volumes have been written on it, and yet there is a woeful amount of ignorance and superstition connected with injuries received from insects and snakes even in places where one would not expect to find it. In this short article I shall attempt to condense much of reading and a considerable amount of clinical experience gained over a twelve-year period as camp physician to Boy Scouts, also knowledge gained first hand in collecting insects and serpents of the Arizona desert.

I shall not attempt to give the various insects their Latin names, but rather those by which they are commonly known. Neither shall I attempt to discuss them in the order of severity of injury which they produce.

The black widow spider (hourglass spider) is called the widow because of her habit of eating her mate. It is called the hourglass spider on account of the peculiar red or yellow marking on its ventral side. The black widow is a large spider, with a body about one-half inch long, almost spherical, and shiny black.

The black widow spider is found in practically every state in the union; also in South America, Europe and Australia. So the wonder is that we do not have far more persons bitten by it than we do.

It is usually found in stables or outbuildings (in outdoor privies it is known to build its web across the seat); it is found occasionally under stones, logs, or boards. In fact, it prefers quite dark, damp places where it can live undisturbed.

This is not a new species of poisonous creature in our midst, for we read where the poison of the black widow was injected into rabbits and guinea pigs without

harmful effects over 100 years ago, nor is there any great amount of mystery connected with it, although if one believed what he reads in the newspapers and allopathic journals of the past few years, he would be led to think that it is altogether new and different.

Physicians should be familiar with the appearance and habits of this spider and should know also that the common spiders are harmless in themselves and that their bites serve only to open up channels of entrance through which infections may take place. The bite of the black widow probably does as much damage by its allergic action as through the real toxin itself. I have known this spider all my life and have known many to be bitten by it. While it was considered poisonous, deaths were not attributed to its bite except in rare cases, and many of these die as much from the treatment as from the bite itself. (The old superstition still exists that whiskey in large doses is a sure cure for insect and snake bites, and many take an overdose of this or some other poison on mere suspicion of being bitten). Children, however, have been known to die from the effects of the bite.

However, it does produce painful injuries which are ofttimes followed by alarming systemic reactions. The poison of the black widow is a toxalbumin and its effect on the human subject is according to the amount injected and to the size of the patient.

The symptoms of a typical "black widow" bite are pain and swelling at the site of the injury. The pain accompanies the lymphatic absorption and soon extends throughout the entire body. The abdomen becomes rigid and painful; nausea and vomiting are common symptoms; ringing in the ears is complained of as are also dizziness and headache. Children may go into convulsions or coma. Following the bite there is evidence of shock—the blood pressure is lowered and temperature decreases. The pulse may become weak and rapid or may remain about normal.

It is of importance to differentiate spider bite from an acute abdominal condition in which a rigid abdomen, profound shock, and leukocytosis may be confusing. A carefully taken history is of prime importance in making this differentiation.

In the treatment of spider bite, elimination by way of the bowels, kidneys and skin is to be encouraged. A good brisk saline cathartic to be followed by an enema is advisable; hot drinks are to be freely used and water drinking is insisted upon. If the patient is placed in a continuous hot bath it will hasten elimination through the skin, and experience teaches that it relieves the pain and promotes recovery. If the pain is too severe some sedative such as Nembutal (Abbott) may be sufficient or the intravenous injection of 20 cc. of a 10 per cent solution of magnesium sulphate may be recommended to relieve the pain. The abdominal rigidity and spasticity, as well as the general muscular contraction, are generally helped at the same time. It may be necessary to repeat this treatment several times. If this fails, it is then time to use morphine in ¼ gr. doses to relieve pain and mental anguish. Serums have been tried, including convalescent serums, although these are still in the experimental stage and without definite proven value. Alcohol should not be given.

It is of real importance to apply a tourniquet above the wound, making several crucial incisions through the skin at the location of the bite and using some method of producing suction (a breast pump will do). These incisions should be about one-quarter inch deep and from ten to fifty in number. The absorption is taking place through the lymphatics and not the blood stream (provided the bite has not pierced a vein), so the tourniquet does not need to be so tight as to stop circulation of blood. The patient is to remain perfectly quiet so as not to increase the absorption, and for this reason the lymphatic pump (osteopathic) is contraindicated, the idea being to retard and not increase the rate of absorption.

We quote from the October, 1935, issue of *Clinical Medicine and Surgery*[1] as follows: "Almost instantaneous and spectacular relief of the frequently agonizing (but rarely fatal) symptoms following the bite of a black widow spider has followed the intravenous injection of 10 cc. of a 10 per cent solution of calcium gluconate. In children it may be given intramuscularly, with almost equally prompt results.

"The theory of this treatment is that the poison acts on the myoneural junctions, which are depressed by the calcium salt—Drs. Gilbert and Stewart, in the A. J. Med. Sc. Apr. 1935" There is also a good article to be found in the *Journal of the American Medical Association* for May 18, 1935.[2]

Tarantulas are those large ground spiders that occur in the warmer sections of the United States. In Arizona I have found them so large as to cover an ordinary sized pie plate when legs were in natural position. In southern Missouri and Arkansas a large specimen would be about one-fourth that size. I have personally cared for many of these bites and have heard of numerous others being bitten by them. I can recall only one death definitely reported as being due to the bite of the tarantula—that of a small child. I once knew a man who recovered after being bitten several times on the tongue by one. (He was using a rubber hose to syphon water and drew the tarantula into his mouth.) These bites are painful, and cause more or less swelling and some nausea. I have found that the application of some alkaline solution as baking soda, ammonia water, tincture of iodine applied to the site of the bite tends to lessen the pain. And packs of hot saturated epsom salts solution not only give relief from the pain, but also tend to relieve the swelling. The chief damage I have found at the Boy Scout camp is from the fright received by the youngster.

Centipedes grow to large size in the southwest, a specimen 12 inches long being not unusual. They are active, swift moving creatures that prefer to live in dark, obscure places beneath stones, boards, logs or dried leaves. Their bodies are divided into many ring-like segments, each bearing a pair of legs.

These animals, contrary to the generally accepted belief in the southwest, do not poison a person by merely crawling over him, and their bite or sting is not dangerous to the adult, but may be serious for children. The danger from this animal is that when irritated it grabs on with its many pairs of legs and punctures the skin with its sharp claws. Each of these punctures are likely to carry in septic infection which may prove fatal or at least dangerous. Following its bite, there is itching and tingling of the skin and some pain and at times nausea and headache. This is due to the toxin which it injects at the time of the bite by its strong jaws, which are ofttimes mistaken for just another pair of legs. So that in a centipede bite one usually will find a number of punctures of the skin (twenty or more) due to the legs clamping down and the two punctures due to the jaws. Ordinary alcohol applied to the bites and lesions caused by the legs will help to sterilize the skin and prevent septicemia. Iodine is also good. Magnesium sulphate packs to the area will also be good to reduce the pain and swelling. The common house centipede seen generally throughout the United States is harmless.

Scorpion stings are to be avoided not because they are dangerous but because they are painful. A large size scorpion may measure four to five inches long, somewhat resembling a lobster in that it has two claws or pinchers with which it grabs on while it gets its tail-piece into action. The stinger is on the tail and it may sting the victim a number of times in rapid succession before it is through. A scorpion sting is usually told by the number and locations of the claw marks and the stings in more or less a short radius around them, may be from one to a half dozen or more in number.

I have found these stings to be treated best just as is a bee sting, together with a generous amount of psychology.

Blister bugs look like elongated potato bugs. When mashed or crushed on the skin of many people, they will produce blisters much in the fashion of Spanish fly blister. These blisters may be a half inch long by a quarter inch wide and elevated about a quarter inch above the surface and filled with serum. When the bug is first mashed, there is a smarting at the point and later the blister is found. These blisters should be opened and drained, care being taken not to spread the serum to new skin areas. Tincture of iodine may be applied or some other antiseptic solution of alkaline nature can be used.

Stinging insects (bees, wasps, ants, etc.) produce painful lesions with which most people are familiar. If the stinger is left in, it should be removed. The pain is thought to be due to the injection of formic acid, which is satisfactorily treated with the application of some weak alkaline solution. Bee stings are not to be classified as dangerous unless the victim is stung by a great number at once. However, it is not uncommon to read of someone's dying within a few hours after being stung by one honey bee, which only goes to prove the statement once before made in this article that ofttimes it is not the direct poison which is dangerous but the allergic reaction of certain individuals to the poison which causes the great amount of damage, and frequently death.

Out of six thousand varieties of caterpillars in the United States there are about twenty known to be poisonous. The caterpillars that possess hair-like processes are the ones that cause stinging and itching. These nettling hairs are connected with poison glands which, when they come in contact with, and penetrate the skin, set up a severe irritation known in many places as the "brown-tail rash." It usually affects the exposed parts as the face, neck, and hands. It begins as an intense irritation not unlike an eczema and each eruption contains a small droplet of fluid.

Caterpillar rash is best treated by applying a solution of ordinary baking soda, moistened with water, or a weak ammonia water is also good. Calomine lotion is soothing and affords relief.

Ticks and tick bites are a very important and interesting subject and a great number of diseases are conveyed thus through these animals. However, for this paper we are concerned only with the bite itself, and not with the disease it transmits.

Ticks are of many kinds and colors, but I wish to call attention to that good old-fashioned kind which, when it gets on the body surface, buries its head, bores in and hangs on. These ticks may retain their hold indefinitely without causing any trouble, for I have known many persons to wear one of these around for days without knowing of its presence. If these ticks are knocked off or crushed or in some way removed and the head is left buried in the tissue, it causes a sore which is painful and hard to heal. If the imbedded tick is discovered and painted with turpentine, it will loosen its hold and can then be lifted off. Another way I have found to remove ticks is to freeze them with ethyl chloride and while still frozen they can be removed without breaking the head off in the tissue. After removal, the injury is treated with iodine or other antiseptic.

The Gila monster looking like a piece of beaded work in colors of black, white, pink or pale yellow of no regular pattern arrangement is found on the desert of Arizona and New Mexico and northern Mexico. It attains a length of from a foot and a half to two feet, is thick of body and very agile on occasion for all its sluggish appearance. This reptile, twisting from side to side, snapping its powerful jaws and giving forth a hissing sound, is a really alarming creature. When it bites, it hangs on with bulldog tenacity and its jaws must be pried apart to free its victim; even if the head is severed from the body the jaws still retain their hold.

The poison fangs in this reptile are in the lower jaw, as are the poison glands. However, there is so much mystery surrounding this reptile and its bite, that it is hard to determine just where truth leaves off and superstition begins, but it is well to take no chances as long as there is any doubt. Personally, I have never known anyone to be bitten by the Gila monster but I am of the opinion that the bite is dangerous not so much from its toxic nature as from septic poisoning by reason of its feeding habits, the monster being a carrion eater. This is the only poisonous lizard in the United States.

Poisonous snakes of the United States are four in number: The coral snake, belonging to the cobra family, is the only member of that species in America. The water moccasin, copperhead and rattlesnake belong to the viper family and the poison of these three is similar in action, but different from the poison of the coral snake.

Snake venom is a complex substance, the nature of which is not definitely known. Fresh venom of these various snakes is a viscous fluid ranging in color through amber, yellowish-green, light straw to colorless. Snake venom is known to retain its toxicity in the dried state for years, but is destroyed by light.

The venom of both cobra and vipers contains two elements—hematoxin and neurotoxin—in different proportions. The hematoxin as secreted by the vipers causes destruction of the red blood cells. There is also destruction of other cells resulting in swelling and discoloration of tissue. The neurotoxin of the cobra family produces little swelling but acts powerfully upon the sympathetic nervous system and the phrenic nerve, causing the victim to die through inability of the diaphragm to act. There is little if any destruction of tissue and little if any discoloration. The chief symptom of cobra poisoning (in America coral snake poisoning) is difficulty in breathing, and if recovery takes place, it is rapid and complete.

The bite of the rattler and other vipers produces rapid swelling and discoloration not only at the site of the injury, but also throughout the body. There may be bleeding from the eyes, ears, nose and mouth and other body cavities; blood may ooze through the vessel walls and cause discoloration throughout the body due to the powerful hemolytic agent. If the patient lives, there remains a bad scar at the point of the injury due to the destruction of tissue which takes place.

The teeth of the coral snake are short, about one-quarter inch in length at most, and are permanently fixed in the erect position, while the fangs of the vipers are long, three-quarters to one inch in length, and are hinged to fold back into the jaw. Pulling the fangs to make a snake permanently safe is a myth, for they are constantly growing and being shed as is the skin. These fangs are true hypodermic needles used to inject the poison deep into the tissue with quite marked success.

Twenty thousand deaths a year in India are recorded due to cobra bites and probably as many more that are not recorded. Thousands of deaths were recorded a few years ago in Brazil due to snake bites. This number has been reduced to fewer than one hundred by the use of antivenom. In the United States there is an average of 150 deaths a year from this cause, although many more persons are bitten but recover. In the *Scientific American* for August, 1935, W. A. Bevan[3] tells us that the rattlesnake is found in all states except Maine and New Hampshire, he further says, "Authorities agree that as far as can be determined the center of rattlesnake population is in Pennsylvania, Massachusetts, New York, and New Jersey."

There are many things which influence the outcome of snake bites, such as the kind of snake, its size, its

feeding time, location of the bite, penetration of the fangs, etc. The rattler is the most dangerous, yet there are some varieties of these worse than others. The bite of the moccasin, copperhead or small rattler is not ordinarily fatal, and a snake which has recently eaten will not be as poisonous as one which has not. A bite located in vascular tissue will prove more dangerous than one which is not, and if the fang penetrates a blood vessel and injects the poison directly into the vein the bite is extremely serious.

Fortunately most bites are on the legs below the knees, and if the fangs penetrate clothing or leather-topped boots, much of the deadliness is prevented. There is much superstition about a snake's ability to strike. In general I would say that snakes are able to strike only about one-half their length or less. Therefore, the average snake would not strike very high.

The viper bite can be recognized by the fang marks which are two in number situated some distance apart depending upon the size of the snake; all other snakes have a row of teeth or a bony ridge and the bite looks horseshoe shaped. If there is no fang mark, it is not a viper bite. Again the bite of the coral snake is similar to that of the common nonpoisonous snakes. However, we are fortunate in that their habitat is limited to a small area in the southern United States and most of us do not have to consider them as a menace.

For the treatment of snake bites I shall depend upon Ditmars'[4] writings to a great extent for he is the dean of authorities on reptiles throughout the world, but I shall not exclude the personal experience of other authorities; also I shall add my own rather limited experience.

This writer is now on the horns of a dilemma for who shall decide when recognized authorities diametrically disagree? For authorities do disagree with Ditmars who believes in, and recommends the use of antivenom. He says, "Antivenom serum is most efficacious when injected immediately after a bite, but it should be administered, even if the victim has already approached a condition of collapse. In late cases, however, the serum is usually injected too late to be properly taken up by the circulation and thus neutralize the venom injected at the time of the bite. . . . If extremely rapid and alarming symptoms develop, the safest course is to administer the serum intravenously."

Ditmars also tells us that a portion of the toxin is neutralized by the blood and the smaller the patient the less blood there is to neutralize the toxin, so more antivenom is required for a child than for an adult. Ten cc. of antivenom should be injected and repeated at intervals until there is a definite and favorable reaction, the usual amount being 20 cc. in the adult and 30 cc. in the child.

Other authorities depend entirely upon mechanical measures in their treatment of snake bites and undoubtedly this is the means of choice for experience shows it to be successful in the great majority of cases. The Robert B. Green Hospital[3] in San Antonio, Texas, which treats many cases, reports a mortality of less than 2 per cent, and this method has been adopted by the United States Army in its treatment of all snake bites.

The treatment is outlined as follows: At the earliest possible time a tourniquet should be applied above the wound (between the bite and the heart). The tendency here is to apply the tourniquet too tightly; it must be remembered that the venom usually is absorbed throughout the lymphatics and not the blood stream, so that the tourniquet is just sufficient to stop the lymphatic circulation. Shortly after the bite there is a great outpouring of lymph into the tissue as evidenced by the great local swelling which takes place. Then crucial incisions are to be made through the skin about one quarter inch deep and one-quarter inch long, not only through the fang mark but a number, 10 to 15 or more surrounding the limb or bite and apply some form of suction. The old-fashioned breast pump is as good as any, and if no mechanical means is at hand, suction can be done by the mouth if there are no sores in the mouth. If swelling continues beyond the first line of incision, a subsequent line is made and suction applied as before. Dr. Dudley Jackson recommends that suction for twenty minutes be given once every hour for from ten to fifteen hours, cupping first one incision then another. Between the cuppings the limb is to be kept quiet and wrapped in a hot fomentation. A saturated solution of magnesium sulphate is good here. Anodynes are given when necessary. Blood transfusions are recommended if the red blood cells drop below three million. The bowels are to be kept moving freely by saline cathartics and enemas given at frequent intervals. And the patient must be encouraged to believe he will recover, for many die of fright. Records show that the majority recover from snake bite with treatment or in spite of the treatment. If antivenom is available or can be secured, it should be used but one should not put trust in it alone. Even if antivenom is available, the suction and other measures should be assiduously carried out.

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Current Medical Literature

Abstracted by
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Obstetric Amnesia, Analgesia, and Anesthesia

Thaddeus L. Montgomery, in *The Journal of the American Medical Association* for May 15, 1937, discusses the importance of amnesia, analgesia and anesthesia in obstetrical procedure. His article is based largely upon the report before the Maternal Health Committee of the Philadelphia County Medical Society.

He points out that "no net progress in preventable death rate for general obstetric practice is demonstrable.

"The nonpreventable death rate has decreased by 49.3 per cent, and the preventable rate has risen 52.5 per cent; the death rate attributable to errors in judgment and technic on the part of the physician has risen 108.5 per cent, and the proportion of maternal deaths due to these errors has increased 107.3 per cent."

"Apparently something is wrong with methods of management in labor, and saddest to relate, whatever is wrong is going more astray with each succeeding year. Probably a number of matters are at fault, but of this complex problem I believe that obstetric amnesia, analgesia and anesthesia constitute an important portion."

In reviewing the intrapartum deaths, one is impressed with the fact that the accoucheur seemed often so bent on getting his patient asleep or her baby delivered that he gave little thought to the outcome of his hasty procedures. "He who employs such methods of deep amnesia and deep analgesia will have it to face and must be prepared to cope with the emergencies it produces.

"The advocates of certain drugs will complain that the description is overdrawn, yet it is the precise story that appears again and again in the case histories.

"The physician's share in responsibility for sudden

fatality in and after labor has increased a hundred per cent.

"On the basis of records of death, spinal anesthesia has been condemned as a method of practice, and the barbituric acid derivatives have been found not as free of danger as many reports would indicate."

The Treatment of Imperfect Descent of the Testis With Gonadotropic Hormones

The author, T. W. Impriss, in *The Lancet* for February 27, 1937, reports upon a series of twenty cases, fourteen of which had had no previous treatment, the other six having been subjects to unsuccessful operations. The preparation used was pregnyl administered intramuscularly in doses of 500 rat units, usually given twice weekly.

"Of the fourteen cases that had had no previous treatment, four have been successful. . . . In all four the most noticeable feature was the underdevelopment of the external genitalia. . . . In each case the injections of pregnyl caused hypertrophy of the external genitalia, followed by descent of the testes. The remaining ten cases were unsuccessful.

"In the six cases previously operated there were two successes. . . . In both, the genitalia were very small and the scrotum in particular was very badly developed." The author, therefore, considered "that injection of pregnyl is much more likely to produce genital hypertrophy than descent of a retained testis. . . ."

The author groups the cases as follows:

"A. Bilateral imperfect descent.—1. With well developed genitalia and the testes probably retained owing to some mechanical cause. . . . The effect of pregnyl here is to produce hypertrophy and not descent, and . . . operation is the only treatment. 2. With poor development of the whole genital apparatus. Pregnyl here will produce development of the whole genitalia and the increase in size of the testes and scrotum may allow the natural position to be gained. 3. Associated with Fröhlich's disease. Here pregnyl also seems indicated.

"B. Unilateral imperfect descent.—In nearly all cases, the other testis and the penis are reasonably developed; since hypertrophy will occur . . . pregnyl should never be employed in unilateral maldescent of the testis.

"C. Testes which are definitely ectopic in position.—Spence and Scowen have pointed out that on anatomic grounds the method cannot succeed.

"It is suggested that, in view of complications, treatment with gonadotropic hormones should be used only in bilateral cases with subnormal genital development."—from *International Surgical Digest* for April, 1937.

Results of Total Thyroidectomy in Heart Disease

The following excerpts of an abstract from the *New England Journal of Medicine* for March, 1937, appeared in *The Journal of American Medical Association* for May 15, 1937:

"Because of the encouraging reports concerning patients in whom total thyroidectomy had been carried out for heart disease and after actual interviews with such patients, Claiborne and Hurxthal performed their first total thyroidectomy on a patient with heart disease in the Lahey Clinic, December, 1933. Since that time twenty-seven patients have been operated on. . . . Their results have been fairly satisfactory in some cases. This appears to have been due in large part to the fact that many of the patients selected for operation were not extremely ill. . . . In following the patients with angina pectoris after a total thyroidectomy, it has been obvious that the amelioration of pain is more or less temporary affair. . . . The decrease in the number of total thyroidectomies performed at present is indicative of a swing back from an enthusiastic trial of a new procedure. . . . There are some patients in whom the operation of total thyroidectomy seems justifiable; however, they are few."

Abstracted by R. E. Duffell, D.O.

Office Surgery Symposium

The April, 1937, issue of *The American Journal of Surgery* is devoted entirely to articles describing surgical procedures which the average practitioner can undertake in his own office. This extraordinary collection of articles was made by the editor of the surgery journal, Dr. Thurston Scott Welton, at the suggestion of Dr. Eugene Hillhouse Pool, President of the American College of Surgeons. In a recent address before the New York Academy of Medicine, Dr. Pool said:

"The treatment of the common injuries is touched but lightly in the medical school and at surgical meetings. The application of a bandage, the suturing of a wound, the care of local infections and the treatment of fractures and dislocations are relegated to secondary place in the efforts of the teacher of surgery. Yet modern conditions have brought injuries and occupational diseases and hazards to a position of primary importance to the community."

This gap in a physician's training must be made up somehow. This issue of the surgery journal is an attempt to give to the general practitioner practical up-to-date methods for handling some of the more common surgical conditions.

In an editorial preceding the main body of the journal, Dr. Welton says: "We realize that throughout the country and among many of our subscribers are men practicing in what are called rural or the 'smaller places,' as well as men in cities who do not devote all of their time to major surgery. These men, by no stretch of the imagination, can be classified as specialists in any branch of surgery. Part of their work must embrace the routine duties of the general practitioner. In addition, they must be prepared and able to handle those so-called minor surgical afflictions common to mankind.

"Frankly, this issue was not designed for the surgeon of great skill and wide reputation, or for the seasoned teacher of surgery or its branches. It was designed for the men laboring in the far away places, and to them we hope it will prove of practical help and value."

Over eighty authors have contributed articles on common conditions, such as wounds and their complications, bedsores, gas gangrene, blood transfusions, burns, infections of the head, fractures of nose, neck, mandible, maxilla, treatment for cinders and splinters, moles, warts, keloids, peritonsillar abscess, acute retention of urine, artificial pneumothorax, etc.

There are two articles on hemorrhoids, including the injection treatment, one article on pruritus ani, two articles on the sclerosing treatment for varicose veins, one article on hydrocele and varicocele (operative and injection treatment), an article on the vas deferens, operative treatment.

In an article on "Office Surgical Treatment of Injuries of the Knee" the author fails to take into consideration minor lesions in the knee joint. For a sprained knee he recommends "cold, followed after several hours by moist heat; rest (posterior splint, or light plaster cast for not more than ten days); adhesive strapping; early motion is important. Later treatment for the swelling, stiffness and weakness—heat (lamp, diathermy, short wave) to promote circulation; massage to aid absorption, graded active and passive exercises to stretch adhesions. The average case should show complete recovery after three to four weeks under this treatment. Continued subjective complaint beyond this period without definite objective signs (swelling, discoloration, muscle spasm) *justifies the suspicion of hysteria or malingering.*" (Italics ours.)

The price of this special issue of *The American Journal of Surgery* is $4.00 and may be purchased from the publishers at 49 West 45th St., New York.

Current Osteopathic Literature

Abstracted by R. E. Duffell, D.O.

OSTEOPATHIC DIGEST
PHILADELPHIA

10: No. 6 (March), 1937

Pneumococcic Pneumonia. William F. Daiber, D.O., Philadelphia—p. 5.
Bacteriological and Serological Phases of Pneumococcic Pneumonia. Tolbert B. Struse, D.O., Philadelphia.—p. 6.
*The Osteopathic Management of Pneumonia. Lester R. Mellott, D.O., Philadelphia.—p. 8.
The Osteopathic Philosophy and Principles Applied to Pneumococcic Pneumonia. Wilbur P. Lutz, D.O., Philadelphia.—p. 10.
The Philadelphia College Museum. Riley D. Moore, D.O., Washington, D.C.—p. 12.
Strength Lies in Quality and Numbers. Russell C. Erb, Philadelphia.—p. 13.
Chemical Department Gastric Research.—p. 14.

***The Osteopathic Management of Pneumonia.**—In outlining the care of the pneumonia patient, Mellott says that the sick room should be well ventilated but not drafty, with temperature between 60° and 70 F. In his opinion extreme cold air irritates the mucous membrane. Applications to the chest surface are ineffective, however a pneumonia jacket serves to keep the patient warm if he should throw off the bedding.

Osteopathic manipulative treatment is very effective in relieving chest pain. Sometimes adhesive strapping is indicated. Drugs should be resorted to only if pain is annoying patient beyond endurance. Drugs are not necessary for the cough in most cases.

If manipulative treatment cannot cope with cyanosis, oxygen may be supplied by use of nasal catheter or oxygen tent. Concentration of oxygen should be from 59 to 60 per cent or from 5 to 8 liters a minute.

Active purging of the bowel during the course of the disease is too drastic in Mellott's opinion; it robs the body of needed nutrition and fluids. The use of B. acidophilus culture with mineral oil (Neocultol), with the addition of lactose to the diet will tend to inhibit putrefaction and aid in the formation of soft stools.

Since blood chlorides are reduced during the progress of pneumonia, it is well to supply the patient with extra salt in some form (in vegetable broth or by tablet). As much as 10 gr. of sodium chloride and 30 gr. of calcium chloride can be given daily if there is not much edema present.

For support of the heart and general circulation, Mellott finds nothing better than adequate osteopathic treatment and proper feeding. "The use of digitalis," he says, "is being narrowed down to those cases having an already existing organic heart disease and particularly in the aged. Its use is questionable in most cases . . ."

In the use of serum, the secret of success is in early typing and in early and adequate dosage—from 100,000 to 200,000 units in 24 hours. The cost of such treatment probably would be around 70 to 80 dollars. The patient should be tested for sensitivity to horse serum before large amounts are given. Mellott feels "that this form of therapy is not entirely foreign to the osteopathic concept and that we should keep an open mind in regard to its use."

10: No. 7 (April), 1937

The Alumni Association Advances. Donald B. Thorburn, D.O., New York.—p. 4.
*Scientific Supplement: Drink and Be Careful. Russell C. Erb, Philadelphia.—p. 5.
President Retires from the Board of Directors.—p. 9.
The Graduate School—Annual Intensive Review Course, May 31-June 12.—p. 10.
Women's Auxiliary Announce Annual Lawn Fete.—p. 11.

***Drink and Be Careful.**—Erb names the toxic or poisonous substances that may be found in the common beverages including water, milk, coffee, tea and maté, cocoa, fruit juices, carbonated drinks, and fermented or alcoholic liquors.

In certain communities in Texas, Colorado, Illinois, and South Carolina, fluorine is found in water. This causes the tooth condition in children called "mottled enamel." Too much chlorine in water (used for bactericidal purposes) irritates the stomach lining.

Aside from zinc and copper contamination arising from the practice of pasteurizing milk, bacteria are the main sources of toxic factors in milk.

The active principles in coffee, tea, maté and Coca-Cola are caffeine and tannin. They are classed as poisons. Caffein stimulates the brain and heart and increases blood pressure. In some cases the pulse rate increases and in others it decreases. The habit of coffee drinking three or four times a day may be one of the causes for the many cases of high blood pressure and hypertension. Caffeine has been found in the milk of women who drink coffee.

The active principles in cocoa are theobromine and theophylline. They are diuretics and sometimes cause headaches. Fruit juices, if they are fresh and free from poisonous sprays are very healthful beverages. Tartaric acid and ferrocyanide are two poisons that may find their way into commercial fruit juices, particularly grape juice.

The condition "jake paralysis" which attracted considerable attention several years ago was the result of drinking beverages such as ginger ales, etc., containing the toxic tricresyl phosphate for Jamaica ginger.

The ethyl group C_2H_5 is the active principle of all alcoholic beverages. It is harmful to nerve tissue. Erb says, "No other poison causes so many diseases both physical and mental as does ethyl alcohol in the various forms which it is taken today. . . . The trade-in-price for repeated exhilarating times with ethyl alcohol includes irreparable damaged blood vessels, hopelessly degenerated muscles and impotent remnants of nerves."

THE JOURNAL OF OSTEOPATHY
KIRKSVILLE, MO.

44: No. 4 (April), 1937

Editorials: The Basic Science Law; The 1938 A.O.A. Convention; Drugs and Osteopathy—George M. Laughlin, D.O., Kirksville, Mo.—p. 13.
The Case Against Medical Education. H. E. Litton, D.O., Kirksville, Mo.—p. 17.
The Power of Nature. Carl P. McConnell, D.O., Clear Creek, Calif.—p. 18.
Trophic Function. Wallace M. Pearson, D.O., Kirksville, Mo.—p. 20.
Professional Policies. Asa Willard, D.O., Missoula, Mont.—p. 22.
Hitting the High Spots in Europe. H. E. Litton, D.O., Kirksville, Mo.—p. 28.
Physiotherapy. Harold E. Clybourne, D. O., Columbus, Ohio.—p. 31.
Arthritis, Its Cause and Treatment. F. P. Millard, D.O., Toronto, Ont.—p. 33.
Another Week End for a Country Doctor. W. S. Corbin, D.O., Chickasha, Okla.—p. 35.
Personalities in Practice: (Dr. John E. Rogers) John C. Button, Jr., D.O., Macon, Mo.—p. 36.

44: No. 5 (May), 1937

Editorials: Basic Science Legislation; A.O.A. Convention for 1938; The Postgraduate Course; Scottish Osteopathic Research Institute; Legislation in Illinois; K.C.O.S. Alumni Association—George M. Laughlin, D.O. Research and Publicity—H. E. Litton, D.O.—p. 10.
Fracture of the Neck of the Femur. George M. Laughlin, D.O., Kirksville, Mo.—p. 14.
Command of Nature. Carl P. McConnell, D.O., Clear Creek, Calif.—p. 17.
Cabbage Patches in Capsules. W. M. Pearson, D.O., Kirksville, Mo.—p. 19.
Angina Pectoris. R. C. Hart, D.O., Chattanooga, Tenn.—p. 21
*Sensory and Motor Paralysis below Knees. M. F. Hulett, D.O., Columbus, Ohio.—p. 25.
The Purpose of Thermogenic Treatment. Wilborn J. Deason, D.O., Chicago.—p. 28.
Arthritis, Its Cause and Treatment. F. P. Millard, D.O., Toronto, Ont.—p. 32.
Physiotherapy. Harold E. Clybourne, D.O., Columbus, Ohio.—p. 34.

***Sensory and Motor Paralysis Below Knees.**—Hulett describes an unusual case of paralysis. In August last, patient, girl, 12 years of age, fell from a horse, hurting her back so severely that it was necessary to assist her in getting home. Recovery from this injury was complete in a day or two.

The following November patient was taken ill at school. She had nausea and vomiting and was taken home and put to bed. She ran a fever of two degrees for a few days. Paralysis of both legs below the knees set in. Spinal fluid test made at nonosteopathic hospital was negative. Hulett took over the case on December 2. General spinal manipulation and stimulation of leg circulation was given twice weekly from December 2 until January 23. Normal function in right leg returned suddenly on December 18, and complete function equally as suddenly in the left leg on January 1. The following day she was walking naturally. There has been no recurrence.

Hulett says, "From the beginning it seemed reasonably certain that it was not infantile paralysis—a myelitis perhaps, but not anterior poliomyelitis."

THE COLLEGE JOURNAL, KANSAS CITY COLLEGE OF OSTEOPATHY AND SURGERY KANSAS CITY, MO.

21:353-384 (April), 1937

Abdominal Symptoms and Empyema Complicating Pneumonia. George J. Conley, D.O., Kansas City, Mo.—p. 355.
Why Serve an Internship? R. A. Murren, D.O., Kansas City, Mo.—p. 359.
*Causes and Treatment of Atonic Postpartum Hemorrhage. Henry Halz, D. O., Seattle, Wash.—p. 361.
How Long Does It Take to Reduce a Lesion and Make It Stay Reduced? George J. Conley, D. O., Kansas City, Mo.—p. 364.
Causes of Puerperal Sepsis in the Hospital and in the Home. E. R. Westaver, D.O., Kansas City, Mo.—p. 368.
Acute Appendicitis—Complicated with Large Ovarian Cyst and Multiple Uterine Fibroids. George J. Conley, D.O., Kansas City, Mo.—p. 370.
Lame Back—Or Series Disease? Grover N. Gillum, D.O., Kansas City, Mo.—p. 373.
Ophthalmology in Obstetrics. Eugene P. Wise, D.O., Kansas Mo.—p. 375.
Fifth Annual Child's Health Conference.—p. 378.
A Treatise on Stammering. Richard L. Freund, Kansas City, Mo.—p. 381.

***Causes and Treatment of Atonic Postpartum Hemorrhage.**—Halz says that excessive bleeding following expulsion of the placenta as a result of faulty uterine contraction and retraction may be stopped by gentle massage of the uterus (kneading through the abdominal wall), by stimulation of the sympathetic ganglia around the bifurcation of the aorta (rub the hand gently over this region), by compression of the uterus between the two hands (one hand inside the vagina and the other on the abdomen), by stimulation of the clitoris. If these measures do not help, firm tamponage of the uterus is necessary followed by elevation of the foot of the bed.

Book Notices

THE HARVEY LECTURES. Delivered under the auspices of The Harvey Society of New York, 1932-1933. Series XXVIII. Cloth. Pp. 233, with plates and charts. Price $4.00. The Williams & Wilkins Co., Mount Royal & Guilford Avenues, Baltimore, Maryland, 1934.

This book, though published in 1934, was not received by THE JOURNAL for review until the early part of this year. This volume brings to its readers the twenty-eighth series of lectures delivered before the Harvey Society of New York. It contains the following published lectures: "The Constitutional Principle in Clinical Medicine" by Julius Bauer; "Similarities Between Diseases of the Vegetable Kingdom and those of Man and Animals" by L. O. Kunkel; "The Nature of the Menstrual Cycle" by George W. Corner; "Dyspituitarism: Twenty Years Later" by Harvey Cushing; "The Oxidation of Hemoglobin and Other Respiratory Pigments" by James B. Conant; "Contributions of Chemistry to the Knowledge of Immune Processes" by Michael Heidelberger; "Recent Biochemical Studies of Liver Function" by J. C. Drummond; and "Humoral Transmission of Nervous Impulses" by Otto Loewi. The last named subject is of considerable interest to osteopathic physicians and is reviewed in the editorial columns of this issue of THE JOURNAL on page 520.

R.E.D.

CASE REPORTS FROM KIRKSVILLE OSTEOPATHIC HOSPITALS. By George M. Laughlin, Author C. Hardy, E. H. Laughlin, Sr., Earl H. Laughlin, Jr., and John H. Denby. Paper. Pp. 219. Fourth Edition Revised. George M. Laughlin Kirksville, Mo.

A collection of articles reporting cases handled by the various doctors mentioned as authors. Probably most or all of them appeared first in *The Journal of Osteopathy*. The first edition was published more than ten years ago and the third in 1930. The book contains many illustrations, both line drawings and half tones. There is an index but no table of contents.

AN INTRODUCTION TO GENERAL PRACTICE. By E. Kaye Le Fleming, M.A., M.D., Chairman of Council, British Medical Association; Direct Representative, General Medical Council. Cloth, Pp. 150. Price, $2. William Wood & Company, Mount Royal & Guilford Avenues, Baltimore, Maryland.

In this little book which is intended to be a practical guide to senior students and those entering practice, there are a number of interesting chapters relating to the practice of medicine in England, such as the Constitution of the General Medical Council; its functions; the privileges of registration; the obligations of those registered; the relations of the practitioner, the state, and the public; national health insurance practice; contract practice; the doctor and patient; hospitals and clinics; the doctor and the law; the doctor and finance, etc.

The point of particular interest to us deals with "the doctor and unqualified healers." Says the author:

"There appears to be a deep-rooted tendency in the lay mind to favor the element of mysticism in the cure of disease. The less such treatment is founded on reasonable or logical grounds the greater appears to be the appeal to the imagination. In this country it is no offence to practice the art of healing provided no claim is made to be a registered doctor. The one exception is with regard to dentistry, and it is not easy to follow the reasons which appear to assume that the unregistered practitioner, while likely to do harm to the teeth, may be permitted with impunity to attend to the rest of the body.

"It is also curious to note that unorthodox practitioners flourish most in this country and America, and where the standard of education is highest, and also, speaking generally, among the wealthiest and presumably best-educated class of the community. Perhaps the explanation is not unconnected with financial considerations, for the more expensive the treatment the more impressive it appears to be.

"The Bonesetter—Undoubtedly the neglect of manipulative surgery by the medical profession opened the door to a host of untrained 'bonesetters,' who obtained reputation beyond their deserts by the dramatic breaking down of stiffness and adhesions by manipulation. Today, however, the title is almost extinct, as the field of activity of the bonesetter has been recovered by the manipulative surgeon.

"The Osteopath—To the public this is but another name for the bonesetter. It is not yet generally recognized that the osteopath claims to cover the whole field of medicine and surgery, and proclaims an entirely new foundation as the cause of all disease and one which is opposed to every scientific factor in orthodox medicine. Osteopathy and orthodox medicine are in direct opposition and if osteopathy is right, then orthodox medicine is wrong. The exposure of the claim of osteopathy in the evidence given before a Select Committee in the House of Lords on the Osteopathy Bill of 1935 was complete.

"Unorthodox treatment remains, nevertheless, and will always remain a profitable business in the light of the inexhaustible credulity of the public. Treatments spring up, become fashionable, flourish and fade, to be ever replaced by something new. The demand will always create the supply. The osteopath is replaced by the chiropractor, who in turn is threatened by the naturopath. The mental healer, the Christian scientist, and the faith healer re-group themselves from time to time round the common centers of an American origin, religious inspiration, and a quasi-scientific mysticism, estabilshed on excellent financial prospects. . . .

"If the doctor is wise, he will grow tolerant of this weakness. More will be gained by an attitude of sympathy than by active opposition. His object is to get his patient well. If someone else can do this better than he can, he has no desire to stand in the way. Let the patient beware of spending much money on an unknown treatment, etc., etc. As a result the patient will seek the advice on which he has set his mind; he will spend his money, and sooner or later learn wisdom, while his doctor will have gained the reputation of being broadminded.

"Putting on one side the obvious advantage of a free field in the domain of humbug, and such matters as the ease of curing a nonexistent disease, there remains the question as to what the quack provides and what the patient requires over and above that which the doctor can supply. Perhaps the latter is unable to sympathize sufficiently with the working of the unscientific mind in its approach to the problem of ill-health. If anything could add to the mystery of this attitude of mind it is the refusal of the devotee of unorthodoxy to pursue his belief to its logical conclusion.

"The most ardent follower of the bonesetter or the osteopath, placing the most implicit belief in small bones

out of place and dislocated spinal vertebrae, which no x-ray can show, will rarely if ever think of going to anyone but a doctor if he breaks his leg or contracts pneumonia.

"The only conclusion to which such reflections lead is that the doctor must give more sympathy to the patient's mind and to the unscientific attitude of thought which he adopts."

RESEARCH IN DEMENTIA PRAECOX. (Past Attainments, Present Trends and Future Possibilities.) By Nolan D. C. Lewis, M.D., Professor of Neurology, Columbia University; Associate Medical Director, Neurological Institute of New York; Field Representative and Coordinator of Research in Dementia Praecox, founded by the Northern Masonic Jurisdiction of the Scottish Rite. Cloth. Pp. 320. Price, $1.50. National Committee for Mental Hygiene, New York City, 1936.

One feels that the title of the book does not very aptly express what is in it.

Many osteopathic physicians know of a considerable grant of money by the Supreme Council of the 33° Scottish Rite Masons of the Northern Jurisdiction, U. S. A. made a few years ago to make possible a survey of dementia praecox. The National Committee for Mental Hygiene had to do with initiating the survey, and this book is a report of the work of that Dr. Nolan D. C. Lewis, who has served as Field Representative and Coordinator of Research. Dr. Lewis visited about 200 laboratories, hospitals, and other scientific centers in the country, consulted several investigators in each organization and made an extensive survey of the literature over the period from 1920 to 1934.

There are chapters on clinical features, on etiological aspects, on alterations in structure and structure function (whatever structure function may be), on differential diagnosis and on therapeutic modifications and experimental therapy, and following each there is a bibliography, arranged according to year of publication and evidently with little actual organic relation to the contents of the chapters.

Dr. Lewis remarks: "The first general impression one gains from a survey of this character is that our research on mental disorders is in a state of chaos in the correct use of the word, i.e., formlessness."

If this book itself in some of its aspects exemplifies this same trait, it may be because the book tries to cover the field as it is.

However, when it comes to future possibilities, it is interesting to note these remarks: "We are confronted with a real challenge in psychiatry which is made up of biological distortions now known as dementia praecox, manic-depressive psychoses, paranoia, epilepsy, suicide and criminality, to mention a few of the unsolved problems. Although the technics now available, both in the psychological and physicochemical fields have not been exhaustively applied and consistently carried out, many thinkers consider from the evidence that these methods are inadequate to solve the fundamental problems. Perhaps we have become . . . too afraid to identify ourselves with a sufficient number of working hypotheses, many of which will doubtless fail. We should not forget that the historical pathway of philosophic and scientific thought is literally strewn with discarded and dead hypotheses and theories, nor should we overlook many of them which have died honorable deaths in that they served as stimuli for perhaps more important discoveries during their time.

"We must build working hypotheses and theories. . . . What we need now are new methods, new points of view and a rearrangement of topics and problems. . . ."

From there he goes on to outline a plan for cooperative work by "two sets of frontier workers; one group of types who think, who flash ideas, and who see problems everywhere, and another group of more practical-minded pioneers who take the ideas that seem worth-while and build them into experimental applications to sink or swim in an actual research situation. . . ."

RECENT ADVANCES IN DERMATOLOGY. By W. Noel Goldsmith, M.A., M.D. (Camb.), M.R.C.P. (Lond.), Physician to St. John's Hospital for Diseases of the Skin. Foreword by A. M. H. Gray, C.B.E., M.D., F.R.C.P. (Lond.), F.R.C.S. (Eng.). Cloth. Pp. 552, with 8 colored plates and 50 text figures. Price, $5.00. P. Blakiston's Sons, Inc., 1012 Walnut St., Philadelphia, 1936.

This is one of the most interesting and valuable of the series on "recent advances," of which there are already well over two dozen volumes. It covers the advances and knowledge of skin conditions during the past two decades with particular emphasis on the newer research on immunology and biochemistry. The contents are logically arranged beginning with such fundamentals as the blood vessels and glands of the skin. Each chapter is followed by a carefully selected bibliography.

MODERN TREATMENT AND FORMULARY. By Edward A. Mullen, P.D., M.D., F.A.C.S., Assistant Professor Pharmacology and Physiology, Philadelphia College of Pharmacy and Science. Foreword by Horatio C. Wood, Jr., Professor of Therapeutics in University of Pennsylvania, Graduate School of Medicine. Cloth. Pp. 707. Price, $5.00. F. A. Davis Company, 1914 Cherry Street, Philadelphia, Pa., 1936.

A desk reference book including not only a great deal of information on treatment but also summaries on differential diagnosis and on the course of action in surgical emergencies and in cases of poisoning. There is also an "interpreter" in five languages to assist the physician in giving yes or no questions in French, German, Italian and Spanish.

PATHOLOGY OF THE NERVOUS SYSTEM: A Student's Introduction. By J. Henry Biggart, M.D. Foreword by Professor A. Murray Drennan, M.D., F.R.C.P. Cloth. Pp. 335 with 204 illustrations. Price, $5.25. William Wood & Co., Mount Royal & Guilford Avenues, Baltimore, 1936.

This is a good book not only for those interested in the pathology of the central nervous system, but also for medical students in general. The author keeps in mind the relationship of cause and effect in each disease described and also correlates closely general pathology and that of the nervous system.

PATHOLOGY. By Eugene C. Piette, M.D., Assistant Professor of Pathology, College of Medicine, University of Illinois, Chicago. Cloth. Pp. 263 with 60 illustrations. Second edition. Price, $1.75. F. A. Davis Company, 1914 Cherry Street, Philadelphia, Pa., 1936.

A good little manual to present the elementary principles of pathology to nurses. Considerable emphasis is placed on the handling of specimens for laboratory work.

IDEAL BIRTH: How to Get the Finest Children. By Th. H. Van De Velde, M.D. Cloth. Pp. 296. Price, 10 shillings, 6 pence. William Heinemann, Ltd., 99, Great Russell Street, London, W. C. 1, England. 1935.

The book is not to be recommended.

State Boards

Illinois

Oliver C. Foreman, 58 East Washington St., Chicago, reports that the next examinations will be held on October 19, 20, and 21 at Chicago.

Iowa

The Iowa Board of Examiners in the Basic Sciences will conduct a written examination at the State Capitol, Des Moines, on July 13 at 9:00 a.m. Address E. A. Benbrook, V.M.D., Secretary, Iowa Basic Science Board, % Iowa State College, Ames.

Kansas

Thomas B. Powell, Larned, has been appointed to the board for five years, his term expiring on May 23, 1942.

Missouri

The following officers were elected on June 11: President, Walter E. Bailey, St. Louis, reelected; vice president, H. A. Gorrell, Mexico; secretary-treasurer, Leon B. Lake, Jefferson City.

North Carolina

Ernest W. Bush, Southern Pines, has been appointed a member of the board for five years, his term ending May, 1942.

Wyoming

C. W. Tarrant, Laramie, was reappointed recently for a four-year term, ending May 20, 1941.

Conventions and Meetings

Announcements

American Osteopathic Association, Forty-First Annual Convention, Stevens Hotel, Chicago, July 5-9. Program chairman, Fred M. Still, Macon, Mo.

American Association of Osteopathic Examining Boards, Stevens Hotel, Chicago, July.

American College of Osteopathic Obstetricians, Stevens Hotel, Chicago, July 3. Program chairman, Kirkland Bush, Harper, Kans.

American College of Osteopathic Surgeons, Stevens Hotel, Chicago, July 4-6.

American Osteopathic Golf Association, Olympia Fields, Chicago, July 8.

American Osteopathic Society of Ophthalmology and Otolaryngology, Stevens Hotel, Chicago, June 30-July 3. Program chairman, David S. Cowherd, Kansas City, Mo.

American Osteopathic Society of Proctology, Stevens Hotel, Chicago. Program chairman, Mabel Andersen, Kansas City, Mo.

Associated Colleges of Osteopathy, Stevens Hotel, Chicago, July 1-3.

Associated Hospitals of Osteopathy, Stevens Hotel, Chicago, July 6.

British osteopathic convention, London, October. Program chairman, Leon Sikkenga, London.

Eastern Osteopathic Association, Hotel Pennsylvania, New York City, April 2, 3. Program chairman, F. Gilman Stewart, New York City.

Georgia state convention, Hotel Dempsey, Macon, May 20, 21, 1938. Program chairman, D. C. Forehand, Albany.

Illinois state convention, Rockford, June, 1938. Program chairman, C. E. Medaris, Rockford.

Indiana state convention, Oliver Hotel, South Bend, October 14, 15. Program chairman, L. A. Rausch, South Bend.

International Society of Osteopathic Ophthalmology and Otolaryngology, Stevens Hotel, Chicago, June 30-July 3.

Kansas state convention, Lora Locke Hotel, Dodge City, October 12-14. Program chairman, Frank W. Shaffer, Salina.

Kentucky state convention, Brown Hotel, Louisville, October 28, 29. Program chairman, E. W. Patterson, Louisville.

Louisiana state convention, New Orleans, October. Program chairman, A. E. Stanton, Crowley.

Michigan state convention, Detroit, October.

Middle Atlantic States Osteopathic Association, Washington, D. C., September. Program chairman, Felix D. Swope, Washington, D. C.

Minnesota state convention, Minneapolis, May 6, 7, 1938.

Missouri state convention, Connor Hotel, Joplin, October 6-8. Program chairman, Ottis L. Dickey, Joplin.

Montana state convention, Livingston, September 20-22. Program chairman, C. W. Dawes, Bozeman.

National Board of Examiners for Osteopathic Physicians and Surgeons, Stevens Hotel, Chicago, July 4.

Nebraska state convention, Lincoln. Program chairman, E. H. Frech, Lincoln.

New England Osteopathic Association, Boston, 1938.

New Jersey state convention, September 18. Program chairman, Harold L. Colburn, Montclair.

New York state convention, New York City, October. Program chairman, Eugene R. Kraus, New York City.

Ohio state convention, Marietta, May, 1938.

Oklahoma state convention, Ponca City, April, 1938. Program chairman, D. W. Streitenberger, Ponca City.

Osteopathic Women's National Association, Stevens Hotel, Chicago, July 4-9. Program chairman, Marie E. Baur, Jenkintown, Pa.

Pennsylvania state convention, Erie, October 8, 9. Program chairman, H. Willard Sterrett, Philadelphia.

Rocky Mountain Osteopathic Conference, Broadmoor Hotel, Colorado Springs, September 16-19. Program chairman, N. E. Atterberry and H. I. Magoun, Denver.

Society of Divisional Secretaries, Stevens Hotel, Chicago, July 5-8.

Society of Thermogenic Therapy, Parkway Hotel, Chicago, July 1-3.

Southwestern Internists Conference, Dallas, Texas, October. Program chairman, Sam Sparks, Dallas.

Vermont state convention, Bennington. Program chairman, C. O. Gaskell, Rutland.

Virginia state convention, Washington, D. C., September.

West Virginia state convention, Huntington, early part of May, 1938.

Official and Affiliated Organizations

ARIZONA

State Society

At the annual meeting held on May 22 at Tucson, Carleton E. Towne, Tucson; V. W. Kilcrease, Casa Grande; Herman C. Bucholz, Yuma, and Philip F. Hartman, Mesa, were the speakers. The following officers were elected: President, David L. Conner, Phoenix; vice president, Paul R. Collins, Douglas, reelected; secretary-treasurer, A. B. Stoner, Phoenix, reelected.

ARKANSAS

State Association

At the annual convention held at Little Rock, May 28 and 29, the following officers were elected: President, Lulu H. Wright, Hazen; president-elect, Paul W. Lecky, El Dorado; vice president, C. W. Dalrymple, Little Rock; secretary-treasurer, Chester C. Chapin, Little Rock, reelected; sergeant-at-arms, A. H. Sellars, Pine Bluff.

CALIFORNIA

Bakersfield Osteopathic Society

This organization was formed at Bakersfield on June 2. The feasibility of establishing an osteopathic hospital at Bakersfield was discussed. Don C. Garn, Bakersfield, was elected president.

Citrus Belt Branch

At Colton, May 20, Cecil D. Underwood and Mr. A. J. Cassaday, both of Los Angeles, were the speakers.

The following officers were elected: President, Alfred C. Fulmor, Riverside; vice president, L. W. Mann, Hemet; secretary-treasurer, Herman Katz, San Bernardino.

East Bay Osteopathic Association

The following officers were elected on May 17: President, E. C. Darnell, Berkeley; vice president, Harold W. Llewellyn, Berkeley; secretary-treasurer, David B. Bosworth, Oakland; trustee, B. Tardieu, Oakland.

Glendale Branch

On May 26 K. Grosvenor Bailey, Los Angeles, was the speaker. The following officers were elected: President, R. C. Virgil; vice president, Philip F. Spooner; secretary-treasurer, Pearl S. Rittenhouse, all of Glendale.

Long Beach Branch

On May 25 William W. Jenney, Los Angeles, spoke on "Osteopathic Treatment in Relation to Fractures and Dislocations."

Los Angeles Branch

On May 10 the following officers were elected: President, Bruce S. Collins, Santa Monica; vice president, M. B. Starbuck, Whittier; secretary-treasurer, Georgiana B. Smith, Los Angeles; trustee, D. Duane Stonier, Los Angeles.

Oakland Osteopathic Physicians and Surgeons Luncheon Club

The following officers were elected on May 17: President, R. L. Carey; vice president, William T. Barrows; secretary-treasurer, David B. Bosworth, all of Oakland.

Orange County Branch

At Santa Ana, May 13, Lawrence M. Young, Santa Ana, spoke on "The Use of Analgesics and Anesthetics in Obstetrical Practice." The following officers were elected: President Vincent P. Carrol, Laguna Beach; vice president, R. W. Tibbetts, Santa Ana; secretary-treasurer, W. J. Scott, Fullerton, reelected; trustees, Lawrence M. Young, Santa Ana, and Harold G. Carlin, Anaheim.

Pasadena Branch

On May 20 Louis C. Chandler, Los Angeles, spoke on "The Approach to Diagnosis."

Sacramento Valley Branch

The following officers were elected in March: President, Glenn F. Coffee, Sacramento; vice president, Harry J. Nossek, Lodi; secretary-treasurer, Una W. Cary, Sacramento; hospitals, S. E. Curran, Sacramento.

At Redding a meeting was held on May 30 and 31.

San Joaquin Valley Branch

The following officers were elected on May 2: President, Beatrice Clark, Exeter; vice president, Roy F. Morehouse, Visalia; secretary-treasurer, Derrell S. Clark, Lindsay. The following committee chairmen have been appointed: Membership, L. N. Pearson, Fresno; public health and education, A. M. Tuttle, Bakersfield; publicity, Dr. Clark; convention program, Inez S. Smith, Bakersfield; legislation, Frank E. MacCracken, Fresno.

Sonoma County Branch

The following officers were elected on April 1: President, N. B. Rundall, Petaluma; vice president, Samuel I. Wyland, Santa Rosa; secretary-treasurer, Caroline L. Weber, Santa Rosa. The following committee chairmen have been appointed: Legislation, B. J. Green, Santa Rosa; public relations, William A. Rees, Santa Rosa; insurance, Robert Healey, Petaluma; program, Gertrude Swearingen, Santa Rosa, and M. L. Neilsen, Petaluma.

FLORIDA

Central Florida Osteopathic Association

No meeting was held in May because of the state convention at St. Petersburg.

At Ocala, June 10, E. C. Vandagrift, Ocala, led a discussion in the way of an anatomical review of the lumbosacral articulation, and W. F. Purdon, Gainesville, a similar review of the sacroiliac articulation.

GEORGIA

State Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, M. Lillian Bell, LaGrange; professional education, Elizabeth L. Broach, Atlanta; hospitals, Matt W. Henderson, Atlanta; censorship, Gussie Phillips, Atlanta; student recruiting, H. H. Trimble, Moultrie; public health and education, Frank F. Jones, Macon; industrial and institutional service, R. W. Hartman, Athens; clinics, Ben Williams, Columbus; publicity, Hoyt B. Trimble, Atlanta; statistics, W. A. Hasty, Griffin; convention program, D. C. Forehand, Albany; convention arrangements, A. A. Jelks, Macon, A. W. Chaplin, Macon, and Frank F. Jones, Macon; legislation, J. W. Elliott, Atlanta; professional development, Sarah E. Johnson, Rome; displays at fairs and expositions, W. C. Holloway, Thomasville.

IDAHO

State Association

The following officers were elected on June 12: President, Earl Warner, Caldwell; vice president, Grace J. Parker, Pocatello; secretary-treasurer, Harriet Sears, Ontario, Ore.

Boise Valley Osteopathic Society

At Nampa, May 20, L. D. Anderson, Boise, discussed "Spinal Curvatures." No meeting was held in June because of the state convention.

ILLINOIS

Winnebago County Osteopathic Association

The Rockford Osteopathic Society was changed to the Winnebago County Osteopathic Association. Meetings are held the second Thursday of each month.

The following officers were elected on April 29: President, N. W. Shellenberger; vice president, G. E. Hecker; secretary-treasurer, H. G. Arfstrom, all of Rockford. The following committees have been appointed: Professional education, W. O. Medaris and H. T. Wise; hospitals, A. S. Loving and G. E. Hecker; censorship, R. B. Hammond and Stanley J. Adamson; clinics, Dr. Arfstrom and H. P. Wise; publicity, Allen H. Miller and C. E. Medaris; statistics, Dr. Miller; convention arrangements, C. E. Medaris; legislation, W. O. Medaris; professional development, Dr. Miller, all of Rockford.

Third District Illinois Osteopathic Association

At Toulon, May 13, Donald C. Delbridge, Champaign, spoke on "Immunity to Infectious Diseases."

The following officers were elected: President, L. E. O'Keefe, Toulon; vice president, J. T. Thornburg, Monmouth; secretary-treasurer, Wilma Gordon, Augusta.

Fourth District Illinois Osteopathic Association

At Bloomington, June 3, William J. Loos, Chicago, lectured on goiter and diseases of metabolism.

INDIANA

First District Indiana Osteopathic Association

At Indianapolis, June 16, Miss Cross, Mooseheart, spoke on "Child Welfare."

Second District Indiana Osteopathic Association

At Shelbyville, May 19, Fred Swope, Richmond, gave a talk on "The Sympathetic Nervous System."

IOWA

State Society

The officers were reported in THE JOURNAL for June. S. H. Klein, Des Moines, is legislative chairman, instead of Dr. Westfall.

Polk County Osteopathic Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, James R. Shaffer; censorship, J. M. Woods; student recruiting, H. J. Marshall; publicity B, H. Devine; legislation, S. H. Klein; professional development, A. D. Becker, all of Des Moines.

KANSAS

Arkansas Valley Society of Osteopathic Physicians and Surgeons

At Kinsley, May 27, V. R. Cade, Larned, spoke on "Nutritional Disturbances of Infants."

The following officers were elected: President, Paul R. Jones, Greensburg; vice president, L. B. Foster, Jetmore; secretary-treasurer, B. L. Gleason; trustee, L. O. Martin, Dodge City; program chairman, T. K. Orton, Hoisington; vice program chairman, Ivan F. Hooper, Russell.

The following committee chairmen have been appointed: Membership, Thomas B. Powell, Larned; professional education, F. E. Loose, Lewis; hospitals, Dr. Cade; censorship, Dr. Hooper; student recruiting, C. Frederick Smith, Kinsley; public health and education, Richard T. Almquist, Burdett; industrial and institutional service, Frederick J. Farmer, Stafford; clinics, H. H. Mettling, Belpre; publicity, J. S. Jilka, Lyons; statistics, B. L. Gleason, Larned; convention arrangements, Dr. Martin; legislation, L. H. Opdyke, Otis; professional development, Dr. Foster; displays at fairs and expositions, Glen D. Jewett, St. John.

Central Kansas Association of Osteopathic Physicians and Surgeons

At Carlton, May 20, C. A. Tedrick, Wichita, spoke on "Diagnosis by X-Ray."

Dickinson County Osteopathic Association

The following are the present officers and committee chairmen: President, Ernest F. Stark, Abilene; vice president, L. A. Moore, Herington; secretary-treasurer, R. H. Wahl, Herington; membership, L. W. Simmons, Carlton; professional education and statistics, Dr. Wahl; hospitals, Dr. Moore; censorship, Leon L. Spencer, Chapman; public health and education, William L. Edwards, Abilene; industrial and institutional, Dr. Moore; legislation, Drs. Wahl and Moore.

Eastern Kansas Osteopathic Society

At Ottawa, June 10, Ray E. McFarland, Wichita, spoke on "Endometrial Biopsy in the Diagnosis of Endocrine Sterility."

North Central Society of Osteopathic Physicians and Surgeons

At a student recruiting meeting at Concordia, May 4, H. G. Swanson, Kirksville, Mo., was the speaker.

Shawnee County Osteopathic Association

At Topeka, May 20, the following case reports were presented: "Brachial Neuritis," C. E. Brown; "Pneumonia," F. M. Godfrey; "Pulmonary Edema," Genevra E. Leader; "Epilepsy," Gladys Shutt; "Chorea," Mary Zercher; "Orchitis," E. Claude Smith; "Eczema of the External Auditory Canal," D. A. Bragg, all of Topeka.

Southwestern Kansas Society of Osteopathic Physicians and Surgeons

At Lakin, May 11, O. C. Kappler, Liberal, was the speaker.

A meeting was held on June 8 at Scott City.

Tri-County Osteopathic Study Association

At Nickerson, May 18, a round table discussion of professional problems was conducted. J. S. Jilka, Lyons, spoke on "Examination and Diagnosis of the Rectum,"

Paul L. Leeper, Hutchinson, on "Ambulant Proctology," and Alfred DeBard, Jr., Hillsboro, on "The Surgical Treatment of Rectal Diseases."

MAINE

State Association

On June 5 the following officers were elected: President, Harry J. Pettapiece, Camden; vice president, Milton F. Hall, Kennebunk; secretary, Louise Jones, Portland, reelected; treasurer, Genoa Sanborn, Lewiston, reelected; trustees, John O. Carr, Bucksport, George F. Noel, Dover-Foxcroft, and L. W. Morey, Millinocket.

Central Maine Osteopathic Society

At Gardiner, May 17, Gervase C. Flick, Chestnut Hill, Mass., spoke on x-ray findings and exhibited pictures of cases, and William T. Knowles, Boston, demonstrated taping.

York County Osteopathic Society

At Saco, May 27, Donald Newell, South Portland, spoke on "X-Ray."

MASSACHUSETTS

Connecticut Valley Osteopathic Association

At Holyoke, May 18, Professor Loomis, Amherst College, spoke on "Geology of the Connecticut Valley."

Middlesex South Osteopathic Society

At Newton, June 3, J. Olive Sartwell, Boston, demonstrated osteopathic technic. Dorathea M. Willgoose, Needham, was appointed chairman of a committee for industrial and institutional service.

MICHIGAN

Detroit Association of Physicians and Surgeons of Osteopathic Medicine

On May 26 the following officers were elected: President, James W. Day; vice president, Russell M. Wright; treasurer, Bernadine Schefnecker, reelected; statistician, George B. Clarke, reelected; trustees, Lester E. Schaeffer, Robert Homan, and William Bradford, all of Detroit; secretary, Verne H. Dierdorff, River Rouge.

Ionia-Montcalm County Association of Osteopathic Physicians and Surgeons

At Greengables, May 13, Arthur Lustig, Grand Rapids, spoke on "Gastroenterology."

A meeting was held on June 10 at Greenville.

Lenawee-Hillsdale Association of Osteopathic Physicians

At Blissfield, May 13, a round table discussion was conducted.

The June meeting was held at Tecumseh. Errett E. Davis, Tecumseh, discussed "Low-Back Pain," C. H. Rausch, Blissfield, "The Treatment of the Common Cold," and Charles C. Auseon, Hillsdale, spoke on "The Osteopathic Physician and Public Health."

Southwestern Michigan Osteopathic Association

At Benton Harbor, May 20, Mr. H. L. Galehouse, Director of the Clinical Laboratory at Mercy Hospital, spoke on "The Laboratory as a Scientific Aid in the Diagnosis and Prognosis of Disease."

Washtenaw County Society of Physicians and Surgeons

The following officers and committee chairmen were elected on March 10: President, Leland S. McCleery, Ann Arbor; vice president, Dorothy D. Sellards, Ann Arbor; secretary, L. J. Wilson, Ypsilanti; treasurer, L. J. Paul, Chelsea; membership, Bert Haberer, Ann Arbor; professional education, Beth Haberer, Ann Arbor; hospitals, C. C. Lucas, Ann Arbor; censorship, N. E. Chevalier, Milan; public health and education, George T. Mickle, Ann Arbor; legislation, Dr. Paul.

MISSOURI

Buchanan County Osteopathic Association

A meeting was held on May 7. On May 14, Mr. M. J. Gross, Monmouth, Ill., was the speaker.

Northeast Missouri Osteopathic Association

At Kahoka, May 13, George M. Laughlin, Kirksville, spoke on "Bone Grafting."

Northwest Missouri Osteopathic Association

At Albany, May 20, Lonnie Facto, Des Moines, spoke on "Reflexes From a Clinical Standpoint," and J. D. Beltram, Wellington discussed "The Profession of Osteopathy."

St. Louis Osteopathic Association

On June 15 Collin Brooke, St. Louis, spoke on "Proctologic Diagnosis." The following officers were elected: President, J. Lincoln Hirst; vice president, E. E. Farley; secretary-treasurer, Paul J. McRae, all of St. Louis and all reelected; trustee, Louis G. Sturmer, Maplewood.

Southwest Missouri Osteopathic Association

At Neosho, May 19, Collin Brooke, St. Louis, was the speaker.

NEBRASKA

Central Nebraska Osteopathic Association

At Clay Center, May 9, the following officers were elected: President, A. G. Zuspan, Aurora; vice president, N. A. Zuspan, Grand Island; secretary-treasurer, H. D. Walters, Hastings.

Southwestern Nebraska Osteopathic Society

At Cambridge, May 16, a meeting was held.

NEW JERSEY

Hudson County Osteopathic Society

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, C. B. Ackley, Union City; student recruiting, F. P. Manchester, Bayonne; publicity, A. J. Molyneux, Jersey City; program, W. F. True, Bayonne; legislation, D. P. Donovan, Bayonne.

NEW YORK

Osteopathic Society of the City of New York

On May 22, Mr. Roger W. Riis, public relations counselor for the society, talked on "The Osteopathic Physician and Public Relations." The following officers were elected: President, Edward H. Gibbs; vice president, Donald B. Thorburn; secretary, E. Campbell Berger; treasurer, Ethel K. Traver; sergeant-at-arms, Harold T. Bryde; board of directors, R. McFarlane Tilley, chairman, Roland S. Coryell and Henry W. Frey; charity ball committee, H. Van Arsdale Hillman, chairman, Mr. Hamilton F. Benjamin, Charles E. Fleck, George W. Riley and Arvid E. Valdane; public relations, Donald B. Thorburn, all of New York City.

On June 5 John R. Miller, Rome, spoke on "Legislation."

NORTH CAROLINA

State Society

The following officers were elected on May 1: President, Elizabeth H. Tucker, Durham; vice president, G. Eugene Holt, Burlington; secretary-treasurer, Frank F. Heine, Greensboro, reelected. The following committee chairmen have been appointed: Censorship, S. W. Hoffman, Statesville; industrial and institutional service, Thomas M. Rowlett, Concord; publicity, E. M. Stafford, Durham; convention program, Charles J. Alexander, Winston-Salem; convention arrangements, W. J. Hughes, Winston-Salem; legislation, T. T. Spence, Raleigh.

OHIO

State Society

The following officers were elected on May 18: President, E. H. Westfall, Findlay; vice president, H. L. Benedict, Marietta; secretary-treasurer, M. A. Prudden, Fostoria, reelected; editor, R. P. Keesecker, Cleveland. The following committee chairmen have been appointed: Publicity, Dr. Keesecker; legislation, J. O. Watson, Columbus.

Second (Cleveland) District Osteopathic Society

Helen C. Hampton, Cleveland, was elected secretary-treasurer, to take the place of Dr. Sprague.

Third (Akron) District Osteopathic Society

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, Kenneth S. Fleming, Youngstown; professional education, G. M. Stevenson, Kent; hospitals, H. L. Cox, Canton; censorship, Arthur E. Smith, Youngstown; student recruiting, Maurice C. Kropf, Orrville; public health and education, Hyde H. Storey, Warren; industrial and institutional service, Alma C. Webb, Akron; clinics, E. L. Jay, Akron; publicity, C. L. Naylor, Ravenna; statistics, Lillian H. Anderson, Akron; legislation, C. F. Hess, Canton; professional development, Joseph F. Rader, Massillon.

At a meeting held on June 9, Charlotte Weaver, Akron, presented four case reports from records of postgraduate clinic for nervous and mental diseases.

OKLAHOMA

State Association

The officers were reported in the June JOURNAL. The following committee chairmen have been appointed: Membership, W. J. Rouse, Norman; professional education, A. G. Reed, Tulsa; hospitals, H. W. Kenaga, Hugo; censorship, C. D. Heasley, Tulsa; student recruiting, Robert B. Beyer, Checota; clinics, W. A. Laird, Ponca

City; publicity, J. Paul Price, Oklahoma City; statistics, C. E. Dickey, Eufaula; convention program, D. W. Streitenberger, Ponca City; convention arrangements, W. A. Laird, Ponca City; legislation, W. S. Corbin, Chickasha, Dr. Price, and R. C. Boyd, Wewoka. Maurice J. Schwartz, Muskogee, is editor.

Central Oklahoma Osteopathic Association

On June 5 Sam Sparks, Dallas, Texas, Vance Toler, Shawnee, Harry Beyer, Weleetka, and Phil R. Russell, Dallas, Texas, were the guest speakers.

Kay County Osteopathic Association

At Ponca City, May 13, W. W. Palmer, Blackwell, discussed "Osteopathic Technic."

The following officers were elected: President, D. W. Streitenberger, Ponca City; vice president, W. A. Laird, Ponca City; secretary-treasurer, W. W. Palmer, Blackwell.

Oklahoma County Osteopathic Association

(See South-Central District of Oklahoma Osteopathic Association)

South-Central District of Oklahoma Osteopathic Association

At Bethany, May 18, a joint meeting was held with the Oklahoma County Osteopathic Association.

PENNSYLVANIA

Erie County Osteopathic Society

The officers were reported in THE JOURNAL for March. The following committee chairmen have been appointed: Membership, Frederick T. Hicks; professional education, J. W. Robinson; student recruiting, Frank E. Avery; public health and education, B. W. Sweet; publicity, Hazzard A. Sweet; convention program, Charles Farrow; convention arrangements, Dale Pearson; legislation, Henry J. Scheid, all of Erie.

Harrisburg Osteopathic Society

On May 18 Ralph P. Baker, Lancaster, spoke on "Office Procedure in Physical Examination."

Lehigh Valley Osteopathic Association

At Doylestown, May 13, Edgar O. Holden, Philadelphia, discussed standards of education in qualifying for the practice of osteopathy.

RHODE ISLAND

State Society

Added to the list of officers and committee chairmen reported in THE JOURNAL for May is the name of Fred Manchester, Providence, chairman of the committee on clinics.

At Edgewood, May 13, Frederick S. Lenz, Edgewood, Providence, spoke on "Tubercular Meningitis," and William E. Kirby, Providence, presented a case history on Paget's disease.

SOUTH DAKOTA

State Association

The following program was presented at the annual convention at Sioux Falls, May 24 and 25:

May 24—"Orthopedics," "Athletic Injuries," H. V. Halladay, Des Moines; "Fever Treatment," W. G. Rosencrans, Vermillion; "Surgical Diagnosis," J. P. Schwartz, Des Moines; "Technic," F. E. Burkholder, Sioux Falls.

May 25—"Surgical Diagnosis," Dr. Schwartz; "Case History," H. H. Cook, Rapid City; "Legislation," J. H. Cheney, Sioux Falls, and C. S. Betts, Huron.

The following officers were elected: President, J. Lynne O'Neill, Mitchell, reelected; vice president, T. H. Hoard, Beresford; secretary-treasurer, Benedicta M. Lewis, Pierre, reelected; trustees, C. F. Overturf, Scotland, and C. M. Parkinson, Highmore.

TENNESSEE

State Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, Sherley D. Alexander, Columbia; professional education, H. Paul Schwartz, Columbia; censorship, Sunora L. Whiteside, Nashville; public health and education, J. R. Shackleford, Jr., Nashville; industrial and institutional service, G. W. Stevenson, Springfield; clinics, Hubert M. Eckerson, Memphis; publicity, W. L. Baker, Memphis; legislation, W. Miles Williams, Nashville.

West Tennessee District Osteopathic Association

At Paris, in May, technic demonstrations were given by Hubert M. Eckerson, Memphis, F. H. Butin, Memphis, J. A. Moore, Dyersburg, W. M. Schoonmaker, Jackson, and others. Walter L. Baker, Memphis, gave a paper on "The Treatment of Bursitis and Tendosynovitis."

The September meeting will be held at Trenton.

TEXAS

State Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership and legislation, Everett W. Wilson, San Antonio; professional education; Henry E. Roberts, Denton; student recruiting, Mary Bedwell, Dallas; public health and education, Howard R. Coats, Tyler; clinics, Sam F. Sparks, Dallas; publicity, Sam L. Scothorn, Dallas; convention program, L. J. Vick, Amarillo; convention arrangements, Rex G. Aten, San Antonio.

Lower Rio Grande Valley Osteopathic Association

The May meeting was held at San Benito. Lloyd Davis, McAllen, reported on the Texas state convention.

Southeast Texas Osteopathic Association

At Beaumont, June 5, Claude J. Hammond, Beaumont, spoke on proctology; D. W. Davis, Beaumont, discussed the injection treatment of hernia; B. L. Livengood, Bay City, talked on surgical tonsillectomy and electrical coagulation of tonsils, and Irwin K. Moorehouse, Beaumont, discussed short-wave therapy.

The September meeting will be held on the 4th at Houston.

VERMONT

State Association

(See Ontario Academy of Osteopathy)

VIRGINIA

State Society

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, S. H. Bright, Norfolk; professional education, Felix D. Swope, Alexandria; hospitals, O. L. Miller, Harrisonburg; censorship, L. C. McCoy, Norfolk; student recruiting, Charles P. Dickerman, Staunton; public health and education, H. S. Liebert, Richmond; industrial and institutional service, H. H. Bell, Petersburg; clinics, B. D. Turman, Richmond; publicity, G. E. Fout, Richmond; statistics, Gena L. Crews, Norfolk; convention program and arrangements, Carl C. Akers, Lynchburg; legislation, E. H. Shackleford, Richmond; professional development, Margaret E. Bowen, Richmond.

WASHINGTON

State Association

At the annual convention held at Bellingham, June 14, 15 and 16, the following program was presented: "The Colloids as Related to Osteopathic Diagnosis and Treatment," "Osteopathic Lesion Diagnosis as Related to Treatment," "The Physiology of Osteopathic Lesion Effects," and "Comparative Therapeutics," Wallace M. Pearson, Kirksville, Mo.; "Legislation," M. R. Kint, Bremerton, and C. A. Hughes, Sunnyside; "New Contacts of Osteopathy," Mary Alice Hoover, Tacoma. The following clinics were held: Heart and circulatory, Howard F. Kale, Seattle; urology, H. L. Chadwick, Spokane; proctology, G. H. Parker, Seattle; feet, T. R. Rickenbacher, Seattle; eye, ear, nose and throat, W. J. Siemens, Seattle; general diagnosis, A. B. Ford, Seattle.

Pierce County Osteopathic Society

At Tacoma, June 16, Wallace M. Pearson, Kirksville, Mo., spoke on "Good Health Through Osteopathy."

Walla Walla Valley Osteopathic Society

The following officers were elected on May 13: President, Harry L. Davis; secretary-treasurer, J. E. Heath; publicity, R. C. Mayo, all of Walla Walla.

WEST VIRGINIA

State Society

The following officers were elected on May 26: President, Harry E. McNeish, Elkins; vice president; Robert B. Thomas, Huntington; secretary-treasurer, Guy E. Morris, Clarksburg, reelected; trustee, Walter F. Whitright, Charleston. The following committees were reappointed: Legislation, John H. Robinett, Huntington, chairman; Roy Eshenaur, Point Pleasant; W. F. Whitright, Charleston; membership, Preston B. Gandy, Clarksburg.

WISCONSIN

Milwaukee County Society of Osteopathic Medicine

On April 30 C. C. Hitchcock, Milwaukee, spoke on affairs pertaining to state membership and E. J. Elton, Milwaukee, discussed legislation.

On May 14 the Central Clinic was discussed.

On May 21 W. D. McNary, Milwaukee, spoke on "Soft Tissue Osteopathy."

On May 28 a representative of Bidwell Better Limbs Company spoke on artificial supports.

CANADA

British Columbia Osteopathic Association

The following officers were elected on May 27: President, Vernon K. Hall; vice president, A. H. Rutherford; secretary, Gordon B. Atkinson, reelected; treasurer, M. Miyazaki, reelected, all of Vancouver.

Ontario Academy of Osteopathy

At a joint meeting held with the Vermont Osteopathic Association at Toronto, May 17 and 18, the following officers were elected: President, N. W. Routledge, Chatham; vice president, J. J. O'Connor, Toronto; secretary, E. S. Detwiler, London; treasurer, Olive Matthews, Kitchener. The following committee chairmen have been appointed: Membership, Dr. O'Connor; censorship, Edward H. Harris, Toronto; student recruiting and public health and education, Mary L. Heist, Kitchener; industrial and institutional service and publicity, George A. DeJardine, Toronto; convention program, L. E. Jaquith, Toronto; convention arrangements, Douglas Firth, Toronto; legislation, Edgar D. Heist, Kitchener; compensation, Dr. O'Connor.

Special and Specialty Groups

Eastern Osteopathic Association

The officers were reported in THE JOURNAL for May. The following committee chairmen have been appointed: Local arrangements, William L. Hitchcock, Rye, N. Y.; program, F. Gilman Stewart, New York City; exhibits, Arvid Valdane, New York City; public relations, E. C. Berger, New York City; registration, K. Wallace Fish, Mt. Kisco.

New England Osteopathic Association

The officers were reported in THE JOURNAL for June. The following committee chairmen have been appointed: Membership, Lionel J. Gorman, Boston; hospitals, Harry H. Campbell, Portland, Me.; publicity, Ralph Gardner Beverly, Keene, N. H.; convention program, Orel F. Martin, Boston; convention arrangements, William T. Knowles, Boston; legislation, A. E. Chittenden, Auburn, Me.

Osteopathic Clinical Society

At Sunbury, Pa., June 20, J. Francis Smith, Philadelphia, spoke on "Recent Developments in the Treatment of the Parkinsonian State," and J. L. Fuller, Willow Grove, spoke on "Some Case Reports and Treatment of Mental Diseases."

DIVISIONAL SOCIETY	PRESIDENT	SECRETARY
Alabama	Meredith White, 432 First Natl. Bank Bldg., Mobile	Percy H. Woodall, First Natl. Bank Bldg., Birmingham
Arizona	D. L. Conner, 312-14 Security Bldg, Phoenix	A. B. Stoner, 422 Security Bldg., Phoenix
Arkansas	Lulu H. Wright, Hazen	Chester C. Chapin, 1007 Donaghey Bldg., Little Rock
California	Walter W. Hopps, 5131 Maywood Ave., Los Angeles	C. B. Rowlingson, 799 Kensington Road, Los Angeles
Colorado	Rodney Wren, 415 Colorado Bldg., Pueblo	C. R. Starks, 1459 Ogden St., Denver
Connecticut	T. J. Ryan, 63 Bank St., Waterbury	Foster D. Clark, 113 Main St., Torrington
Delaware	G. F. Nason, Jr., Delaware Ave. & Madison St., Wilmington	Edith M. Incababian, Kane Apartments, Wilmington
District of Columbia	Ardeshir B. Irani, 409 Colorado Bldg., Washington	Clara U. Little, 1629 Columbia Road, Washington
Florida	H. T. Kirkpatrick, 701 Olympia Bldg., Miami	David R. Shull, 308 Sweet Bldg., Fort Lauderdale
Georgia	Grover C. Jones, 609-12 Bibb Bldg., Macon	Hoyt B. Trimble, 904 Atlanta Natl. Bank. Bldg., Atlanta
Hawaii	Ira T. Lane, 425 Damon Bldg., Honolulu	Emily C. Dole, 1548 Kewalo St., Honolulu
Idaho	Earl Warner, American Theatre Bldg., Caldwell	Harriet Sears, Box 650, Ontario, Ore.
Illinois	R. P. Armbruster, Rathbun Bldg., Pontiac	Fred B. Shain, 7046 Crandon Ave., Chicago
Indiana	V. B. Wolfe, Walkerton	F. L. Swope, 36 S. Eighth St., Richmond
Iowa	J. M. Woods, 702 Equitable Bldg., Des Moines	F. A. Gordon, 208 Masonic Temple, Marshalltown
Kansas	J. F. Dinkler, Commercial Nat. Bank Bldg., Emporia	Raymond L. DeLong, 721 First Natl. Bank Bldg., Wichita
Kentucky	R. Evelyn Alvord, 310 Citizens Bank Bldg., Lexington	N. H. Wright, 526 S. Fourth Ave., Louisville
Louisiana	W. Luther Stewart, 703 Washington St., Alexandria	Henry Tete, 1117 Maison-Blanche Bldg., New Orleans
Maine	Harry J. Pettapiece, 1 High St., Camden	Louise M. Jones, 142 High St., Portland
Maryland	John W. Jones, 111 N. Charles St., Baltimore	Eunice B. Waugaman, 33 S. Centre St., Cumberland
Massachusetts	Laurence M. Blanke, 36 Court St., Dedham	Ernest A. Marcoux, 337 Washington St., Newton
Michigan	Walter P. Bruer, 2955 W. Grand Ave., Detroit	Sherwood Nye, 706 Peoples State Bank, Pontiac
Minnesota	W. H. Albertson, Hirsh Bldg., Austin	A. J. Smith, 730 Metropolitan Bank Bldg., Minneapolis
Missouri	Collin Brooke, 210 Frisco Bldg., St. Louis	H. E. Litton, Kirksville
Montana	Jack E. Cox, 303 Montana Bldg., Lewistown	J. H. Strowd, Glendive
Nebraska	P. F. Kani, 2226-28 Jones St., Omaha	I. D. Gartrell, Box 84, Clay Center
New Hampshire	Ralph G. Beverly, 118 Washington St., Keene	C. Stevens Garran, Realty Bldg., Rochester
New Jersey	Gordon P. Losee, 431 South Avenue, W., Westfield	Lois Goorley, 202 W. State St., Trenton
New Mexico	J. Paul Reynolds, 309 N. Richardson St., Roswell	L. C. Boatman, 138 Washington Ave., Santa Fe
New York	John R. Miller, 183 W. Dominick St., Rome	Allen S. Prescott, 316 S. Warren St., Syracuse
North Carolina	Elizabeth H. Tucker, 616 W. Chapel Hill St., Durham	F. R. Heine, North Carolina Bank Bldg., Greensboro
North Dakota	B. B. Bahme, Reed Bldg., Dickinson	Georgianna Pfeiffer, 110½ Broadway, Fargo
Ohio	E. H. Westfall, First Nat'l Bk. Bldg., Findlay	M. A. Prudden, 205 Union Natl. Bank Bldg., Fostoria
Oklahoma	T. G. Billington, Post Office Bldg., Seminole	H. C. Baldwin, 518 Atlas Life Bldg., Tulsa
Oregon	W. W. Howard, 215 E. Jackson Blvd., Medford	J. A. Van Brakle, 410 Selling Bldg., Portland
Pennsylvania	George T. Sill, 928 Walnut St., Allentown	J. E. Barrick, Hartman Bldg., York
Rhode Island	Charles E. Johnson, 171 Westminster St., Providence	May H. Pease, 365 Angell St., Providence
South Carolina	Edward W. Pratt, 222 King St., Charleston	Joanna Barnes, Ridge Springs
South Dakota	J. Lynne O'Neill, 106 E. Fourth Ave., Mitchell	Benedicta M. Lewis, Pierre
Tennessee	L. D. Chesemore, Gatlin Bldg., Paris	Helen Anna Terhuwen, 1015 Warner Bldg., Nashville
Texas	Ted R. Krohn, 324-28 Hamilton Bldg., Wichita Falls	J. W. McPherson, 418 Allen Bldg., Dallas
Utah	B. W. Clayton, 401 Boston Bldg., Salt Lake City	Alice Houghton, 617-18 Templeton Bldg., Salt Lake City
Vermont	R. Kenneth Dunn, 67 Main St., Brattleboro	Kathleen A. Hunt, 39 Battell Block, Middlebury
Virginia	Vincent H. Ober, 409-11 Bankers Trust Bldg., Norfolk	C. C. Akers, Medical Bldg., Lynchburg
Washington	R. C. Mayo, 309 Drumheller Bldg, Walla Walla	S. M. Pugh, 3010 Hoyt Ave., Everett
West Virginia	Harry E. McNeish, Elkins Motor Sales Bldg., Elkins	Guy E. Morris, 542 Empire Bank Bldg., Clarksburg
Wisconsin	Paul Koogler, Hustisford	E. J. Elton, 208 E. iWsconsin Ave., Milwaukee
British Columbia	Vernon K. Hall, 5602 Balsam St., Vancouver	G. B. Atkinson, 713-21 Birks Bldg., Vancouver
Ontario	W. Routledge, 34 Fifth St., Chatham	E. S. Detwiler, 444 Waterloo St., London
Quebec	W. P. Currie, 609 Medical Arts Bldg., Montreal	Allan A. Eggleston, 609 Medical Arts Bldg., Montreal
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Bastian, Robert, 3rd, from 1616 Pacific Ave., to 2801 Pacific Ave., Atlantic City, N. J.

Baum, Harry C., from Kirskville, Mo., to 9178 Mason Place, Detroit, Mich.

Beall, Clara P., Name of building changed from Gurney Bldg., to 302 Empire Bldg., Syracuse, N. Y.

Beall, Clara P., name of building changed from Gurney Bldg., to 302 Empire Bldg., Syracuse, N. Y.

Beall, Francis J., Jr., name of building changed from Gurney Bldg., to 302 Empire Bldg., Syracuse, N. Y.

Blanchard, Charles A., from 846 Stuart Bldg., to 1212 Sharp Bldg., Lincoln, Nebr.

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Borg, Lee R., from 1914 S. Vermont Ave., to 1130 W. Santa Barbara, Los Angeles, Calif.

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Coles, Edwin A., from 603 American Bldg., to 1013 Superior Ave., Dayton, Ohio.

Conn, Milton, from Stuart, Iowa, to A. M. P. Bldg., Queen & Edward Sts., Brisbane, Queensland, Australia.

Cook, Gordon F., from 108 Park St., to 82 Cadogan Square, London, S. W. 1, England.

Cornelius, James L., from Hale, Mo., to Grants Congregational Hospital, Grants N. Mex.

Costin, James F., from Bellfontaine, Ohio, to West Branch, Mich.

Cowell, John A., from 146 Wentworth Ave., to Osteopathic Hospital of Rhode Island, 1763 Broad St., Providence, R. I.

Davies, Catherine E., from 1014 Wilkes-Barre Deposit & Savings Bank Bldg., to 1206 Wilkes-Barre Deposit & Savings Bank Bldg., Wilkes Barre, Pa.

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Dorman, Ralph W., from 215 Boardman, to Beadle Bldg., Traverse City, Mich.

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Kring, Robert B., from St. Simon Island, Ga., to Old State Bank Bldg., Fremont, Mich.

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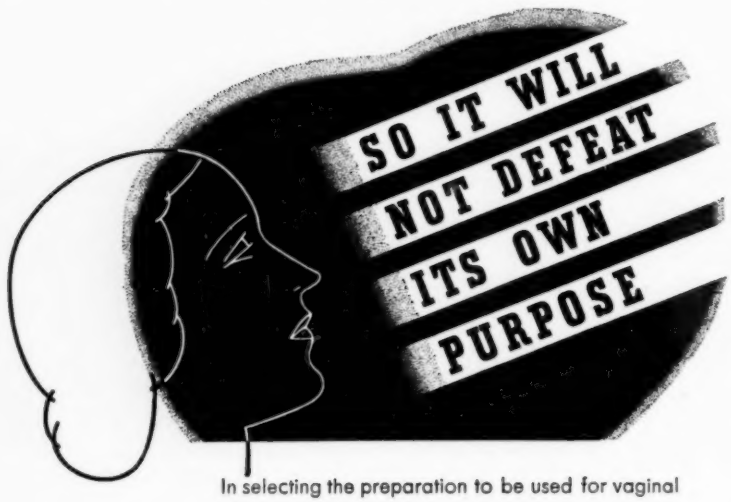

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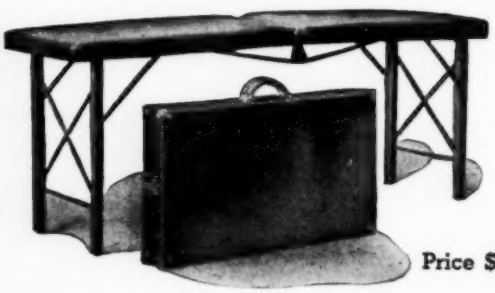

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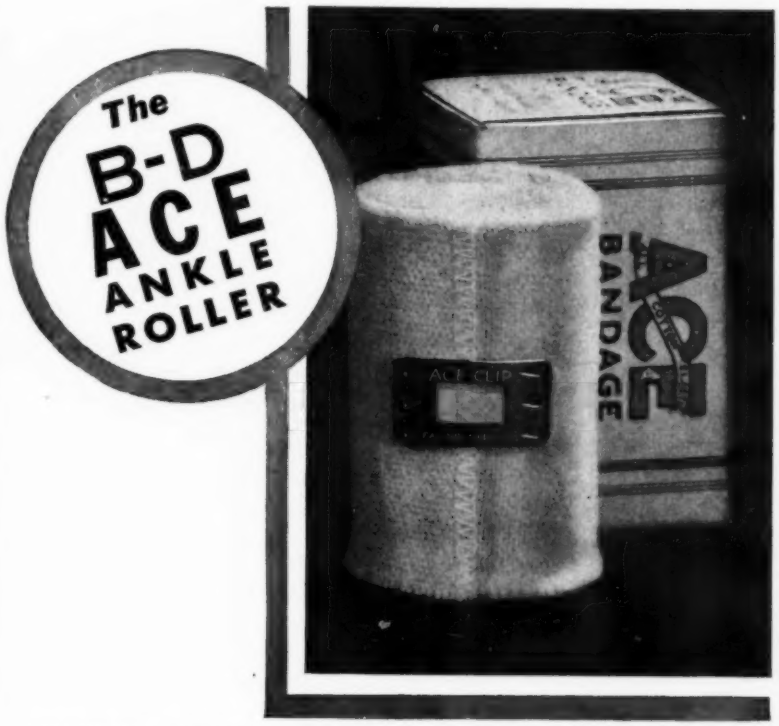

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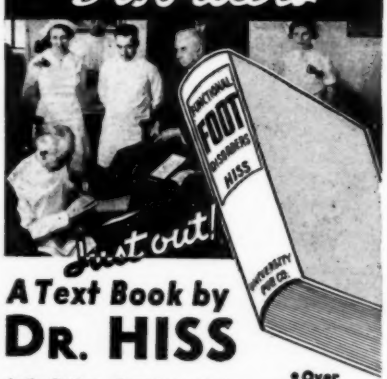

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By T. J. Ryan, D. O.

A story of special appeal to golf players in which the author explains to a group of enthusiasts the benefits to be derived from osteopathy used before playing instead of after.

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By William O. Kingsbury, D. O.

"Nervous stomach" is the complaint described under this heading. The daily routine of a typical victim of the disorder is given, together with an explanation of how osteopathy can relieve it.

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By Eva W. Magoon, D. O.

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Other Good Articles. Many Fine Pictures

Osteopathic Health No. 92

Hay Fever (Its Prevention and Treatment)

Discussed from three angles—Allergy, Diseased Nose, External Irritants.

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The dangers of hypnotics and analgesics, when taken indiscriminately, are extolled.

Nervousness in Children

Structural faults are explained as being one of the most common causes for irritableness in children.

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